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JANUARY, 1897.

[No. 1

Original Communications.

HÆMOPTYSIS.*

By J. M. COTTON, M.D.,
LAMBTON MILLS.

WHEN asked by your committee to read a paper at the annual meeting of the association, an interesting case or two of hæmoptysis, then under my care, struck me as a subject that would be of some interest to the associates.

Hæmoptysis is not a disease in itself in the strict sense of the term, but a symptom of some pathological condition existing in or adjacent to the air passages.

There is no case that gives the attending physician greater anxiety than does the subject before us, and none that seizes the patient with greater alarm. The effect of blood being brought up in quantities from the lungs gives the patient and his friends the impression of impending death, or at least that his days are numbered.

* Read before the Ontario Medical Association, Windsor, 1896.

In this paper I do not propose to elicit anything new, but simply wish to give you my own clinical experience in a few cases that have come under my observation. The causes of hæmoptysis, having regard to its pathology, may be thus enumerated :

- (1) Hæmorrhage from the pulmonary artery or its radicles.
- (a) Rupture of wound of the lung from external violence.
- (b) Active hyperæmia of the lungs—inflammatory, vicarious, or induced by violent effort or excitement. The active hyperæmia may be primary as regards the lungs ; or may supervene or be attendant upon disease already present in them.
- (c) Mechanical hyperæmia of the lungs, secondary to heart disease or embolism of one of the pulmonary branches, or to pressure from tumors, such as enlarged bronchial glands.
- (d) Necrotic division of vessels in the course of softening of tubercular or other consolidations in destructive lung diseases—phthisis, tuberculosis, cancer.
- (e) Aneurismal dilatation or simple erosion of branches of the pulmonary artery, exposed in the course of excavation of the lung, or ulceration of the bronchial mucous membrane.
- (f) Primary atheroma of the pulmonary artery within the lung.
- (2) Hæmorrhage from the bronchial capillaries.
Capillary hæmorrhage from the bronchial mucous membrane.
- (3) Hæmorrhage from the aorta or one of its great branches.
Aneurism rupturing through the lung or into a bronchus.

The natural history of hæmoptysis is practically that of phthisis. Among the ancients it was believed, however, to be the cause, and not the effect, of phthisis.

The doctrine that blood effused into the lung became pus and produced corroding and ulcerating effects appears in many prominent authors between the Hippocratic writing and the nineteenth century.

Any view we may have respecting the nature of phthisis cannot lessen the significance of hæmoptysis being one of its most important physical signs. It is a sign, too, that often aids us in prolonging life by drawing our attention to a condition that might otherwise remain concealed.

The following history of cases taken from my case book will serve to illustrate some of the different forms of hæmoptysis that one gets in general practice.

In looking over my case book I find the following :

CASE I. In October, 1888, I was called to see Mrs. B., æt. 60, housewife, thin and frail. Came to Canada when quite young, had

been ailing for years, one son. On examination found large cavity in left lung, with profuse expectoration of thick, yellowish color, loaded with bacilli.

In May the following year I was called hurriedly, and found patient suffering from severe and profuse attack of hæmoptysis. The extreme emaciation of patient and large amount of blood lost, and knowing her condition, first impressed me that patient could not live long; she rallied, however, and in six weeks was able to sit up. As she felt so well the nurse was discharged. Hæmorrhage was under control the first three days; the following week, upon some extra exertion, another profuse hæmorrhage commenced, which ended fatally in twenty-four hours. Diagnosis, necrotic division of blood vessel in the course of softening at or near cavity in left lung.

CASE 2. Hy. P., æt. 42, miller, good family history, well developed, always healthy. September, 1891, walked into office saying he had been coughing up blood for the past hour. Upon examination found patient had fibroid phthisis of right lung. Sputum contained bacilli; he continued raising small amounts at different times for three months; had short holiday, during which he improved; he resumed his occupation against advice. The following June was forced to give up work. Disease in lung now rapidly progressed, and he died during the winter of 1893; did not have any subsequent hæmorrhage.

CASE 3. Hy. W., gardener, æt. 40, in Canada ten years, was miller previous to this, family history good, intemperate. In 1893 attended him for sharp hæmorrhage from bowels; lost sight of him for a year; when again called found complete collapse of right lung, chest flattened on that side and no expansion, free from cough and not suffering much inconvenience except on exertion, when he complained of "want of breath." Expectoration slight, and no bacilli found on several examinations. In April last had sharp attack of hæmorrhage; was better in forty-six hours; was not inconvenienced to any great extent, as he was out attending to his duties inside of a week. In this case the hæmorrhage did not leave that excessive weakness as is usual; amount lost, half pint.

CASE 4. Mrs. C., æt. 37, wife, family history fair, five children strong and healthy, suffering from dyspepsia and so-called bilious spells. Was hurriedly called to see her in April, 1894; found possibly a teacupful of blood, bright and clear, had come up without effort after a feeling of smothering in upper part of right lung. Temperature $99\frac{1}{2}^{\circ}$. Quickly responded to treatment, and no further return for two years; in the meantime increased in weight and strength. In April of this year had another slight attack, with

same symptoms as before ; is now apparently well. Sputum examined frequently ; result, *nil*.

CASE 5. Miss N., æt. 29 ; paternal family history, tendency to phthisis ; mother suffering from so called chronic bronchitis, with profuse expectoration and loaded with bacilli ; brothers and sisters all healthy ; patient had hæmorrhage first time when fifteen years old, good recovery. Scar on left side of neck following scarlet fever. Suffered from anæmia, which responded readily to treatment ; heart and other organs apparently sound. On January 12th of 1895 had a chill upon retiring ; pain in left side, followed the morning of the 13th by rather a profuse hæmorrhage ; this hæmorrhage responded to treatment, so that about an ounce daily came with expectoration, which continued about a week ; this gradually lessened until expectoration resembled that of pneumonia, only a brighter color. Temperature ran from normal to $99\frac{1}{2}^{\circ}$, pulse from 60 to 80. Respiration at 20, as shown by chart. The patient described a peculiar feeling in left base of lung, and felt as if blood came from that point ; blood came without a cough, or at least a slight expiratory effort to clean the throat was all that was necessary. A physical examination showed dullness on percussion at left base, increased vocal resonance, and crepitant rale, which gradually cleared up as sputum became normal. Vesicular breathing was weak over the greater part of the lung. Patient did not emaciate as one would expect, but felt extremely weak, and on the slightest exertion dyspnoea was marked, which was owing to cardiac weakness. On the fifty-second day of disease patient sat up for a short time, when a slight hæmorrhage showed itself. This soon subsided, and did not advise sitting up again until eighty-seventh day of disease, as she gradually grew stronger. Examined lung on the one-hundredth day of disease ; could not make out anything except the weak vesicular breathing ; expansion four inches. Temperature normal. Pulse 70 to 80. Respiration 18. Is now up and about the house, and daily out for drives.

Continued to improve gradually until about the middle of June, when she had another sharp attack, which responded readily to treatment. The expectoration was clear again in less than a week ; physical signs as before, excepting dullness on percussion, which does not cover so large a space. Weak vesicular breathing very marked ; appetite was never affected, sleeps well. Temperature irregularly $\frac{2}{3}$ degree above normal pulse ; regular at 60. Steadily improved, and was able to visit away from home during latter part of August ; remained away until February following. She had gained consider-

able in weight and had sufficient strength to go about, and felt almost as well as ever until January 8th, the present year. Hæmorrhage commenced again, but not in large quantities, bright red, say $\frac{1}{2}$ oz. a day ; this continued until the 25th of January, when a profuse hæmorrhage came on. Some of the material brought up resembled organized tissue similar in appearance to the lung substance. After this the hæmorrhage suddenly ceased ; this was on the 25th of January, and since that time there has been a total absence of blood in the expectoration. The day of profuse hæmorrhage the temperature, as shown by chart, was : Temperature, $99\frac{4}{5}^{\circ}$; pulse, 128 ; respiration, 26. Temperature gradually fell to normal before February. Patient was not under my care during the last illness, and cannot give any physical signs previous to or immediately after final bleeding. She was brought home a distance of some sixty miles and stood the journey well. Chart shows temperature $98\frac{4}{5}^{\circ}$; respiration, 8 ; and pulse, 90, on arrival home.

Physical examination of chest upon arrival home.

A small consolidation in lower left base, just below inferior angle of scapula, blowing respiratory murmur about the size of a penny, increased vocal resonance, and surrounding this a very feeble vesicular murmur. Temperature, normal ; respiration, 18 ; pulse, 70 to 80 ; good appetite and spirits, sleeping well, and absence of night sweats ; slight cough after long sleep, with little expectoration ; microscopical examination of this shows that it comes from the upper air passages. Examinations at regular intervals during this long illness, made by different pathologists, show an absence of bacilli. Physical signs at the present time show the consolidation as having cleared up, and nothing can be demonstrated other than the feeble vesicular breathing. Patient is up daily, can take a considerable amount of exercise, and is daily improving in strength, and weighs as much as ever.

This case is interesting :

- (1) From the number of severe attacks and the great amount of blood lost.
- (2) From the manner in which the lung clears up subsequent to each attack.
- (3) The absence of the physical and other signs of phthisis.
- (4) The manner in which the last severe hæmorrhage terminated.

I feel unable to place the diagnosis of this case under one of the above pathological subdivisions, but were I to venture an opinion it

would lean to the bursting of an aneurismal dilatation of one of the smaller branches of the pulmonary artery.

In three of the above cases we have been unable to demonstrate the presence of tubercular bacilli. We are never justified, however, in deciding that tuberculosis is absent because we do not find bacilli in the sputum ; on the other hand, their presence is the only sure diagnostic significance.

Pulmonary hæmorrhage occurs in all stages of phthisis.

The reason we do not have more frequent hæmorrhage in phthisis is because the contents of the vessels usually undergo thrombosis. Severe hæmorrhages often have their origin in the perforation of little aneurisms on the smaller subdivisions of the branches of the pulmonary artery which penetrate into the interior of the cavities. Profuse hæmorrhage, of course, weakens the patient very much, and generally depress his spirits ; while it is sometimes the direct cause of death, the patient generally survives it. I do not believe a moderate hæmorrhage materially hastens the progress of phthisis if there is not too much lung tissue involved ; while, on the other hand, a slight attack is considered beneficial in the early stages of this disease. This I believe is due to :

- (1) Relief of the congestive area.
- (2) The patient is more likely to take greater care by having his attention drawn to this symptom.

TREATMENT OF HÆMOPTYSIS.

We must direct our attention to lowering the pressure in the pulmonary circulation. During the milder forms rest in the recumbent position will usually suffice ; at the same time assure your patient that the slight loss of blood will be more of a security than a danger.

In the more severe forms, rest in bed, fresh air, freedom from anxiety on the part of attendants and friends, broken ice dissolved in the mouth, and a full hypodermic of morph., gr. $\frac{1}{4}$ to $\frac{1}{2}$, with gr. $\frac{1}{100}$ atropia. This will, I believe, suffice for treatment in the greater number of cases of phthisical hæmoptysis. If bleeding still continues, use a half dram of turpentine in emulsion or on sugar, repeated in half an hour. After hæmoptysis ceases, the treatment is that of an ordinary case of phthisis. I have much faith in the treatment of lung trouble by inhalation of kreasoti, iodine, eucalyptus, pinus sylvestrus, with spirits of chloroform added as a sedative for cough, if present.

The simplest and most convenient inhaler I have found to be

the Globe nebulizer. It is always ready for use, and does not get out of repair.

There is also the same object attained by using inter-tracheal injections of kreasoti suspended in castor oil. I have used as much as forty drops at one sitting without any untoward effects. This should be repeated on alternate days. I have repeatedly seen patients improve by this method without any medicinal treatment whatever. As many of these cases suffer from a dilated stomach, it is well to give some attention to the assimilative functions. This treatment could be enlarged upon considerably, but I have avoided detail in order to shorten the paper.

In this paper I have not taken up any of the rare or less common forms of hæmoptysis as produced by malignant growth within the bronchi, aneurism of aorta or one of its branches.

We have a form of hæmoptysis connected with cardiac diseases, however, which might be mentioned. The following case is a good illustration :

CASE 6. R. P—, æt. 28. Bookkeeper. Family history good. Severe attack of inflammatory rheumatism three years before he came under my notice. In 1888 was called hurriedly to see patient, and found him in a sitting position, gasping for breath, and raising blood very freely, probably half a pint in all. He had just taken part in a game of football. Physical examination of lung did not reveal any abnormal condition, but heart showed extensive mitral disease (obstructive). Was able to resume work in two days, and had only one slight attack since. Is now in as good health as could be expected with this condition of heart.

This form of hæmoptysis is purely mechanical, and is due to obstruction and reversal of the circulation. The infective element being absent, such cases are seldom followed by phthisis.

Treatment. Rest in recumbent position, and strychnia hypodermically, to aid overtaxed heart.

THE OPERATION FOR CLEFT PALATE.—A FEW PRACTICAL POINTS.

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THE few points to which I wish to direct your attention in connection with the operation for cleft palate have impressed themselves on me as important after an experience in this operation in thirty-four cases. In all these cases I have followed the same general plan of operation, but I found that wherever the details were not properly carried out more or less want of success was sure to follow, and it is on this account they have seemed to me so worthy of attention.

The extent of a cleft of the palate may vary from a bifid uvula to a division of the whole of the soft and hard palate, and even to separation of the intermaxillary bone on one or both sides from the maxilla. Complete clefts of the soft palate usually include a slight notch in the hard palate as well. Clefts of the hard palate are usually to one or other side of the middle line, the septum being then attached to the complete side, but the palate may be incomplete on both sides, in which case the septum remains free and unattached in the median line.

As to suitability of cases for operation, I think I may say almost all cases of cleft palate in children may be operated on with success, and certainly should be operated upon. In adults we find a fair proportion unsuitable for operation. These are cases with but little tissue on each side of the cleft, and with a low arch. In these cases, even if we succeed in closing over the cleft, there results only a tense band bridging over the space, which does not suffice to close off the nose cavity from the lower pharynx, and therefore the articulation is but little if at all improved. In these cases a well-made obturator, which can be procured from a dentist, generally affords better results. As to the age of operating, the most suitable time is at the age of two and a half to three years, or as soon after as the

health of the child is good. If successfully operated on at this age the child ought to learn to speak correctly ; but the longer the operation is delayed after this age the less satisfactory will be the result as regards articulation.

In very extensive clefts, where the whole of the hard and soft palate and the alveolus are divided, it is usually advisable to attempt to close only a part of the cleft at the first operation and the remainder at a subsequent occasion, and the easiest part should be done first, whether it be the separated and displaced intermaxillary bone, or the cleft of the hard palate, or that of the pendulous palate.

PREPARATION FOR OPERATION.

On account of the special objection to vomiting and retching during the operation, the patient should be prepared for a day or two before, in order to get the digestive apparatus in the best order, and I think the morning is the best time, for the same reason, the stomach being less likely then to contain any food. Chloroform is probably the best anæsthetic, and it particularly advantageous to administer it with a special apparatus, such as Sach's inhaler, which consists of a chloroform bottle with bellows attachment and tubes, so that the anæsthetic can be administered continuously without obstructing the operator.

A suitable gag is very important, and Smith's gag is preferable to Whitehead's, especially in those cases in children where the cleft extends well forward toward the alveolus. The ordinary operation with lateral incisions and sliding flaps is the one I have adopted in all my cases. I doubt very much if the division of the bone gives much, if any, additional advantage. Clefts of the velum which stop short of the hard palate are usually easy to close, and need no special reference. When, however, the cleft involves the bone, be it little or much, the difficulty is greatly increased. The first step in the operation is to pare the edges. This should be done freely from the tip of the uvula to the anterior angle of the cleft on each side, taking care to pass completely around the angle. A very sharp long-handled knife is better for the purpose than scissors, and, if possible, the paring should be removed in one complete strip. The next step is to make the lateral incisions and separate the flaps. The lateral incision should be made midway between the edge of the cleft and the teeth, and should go down to the bone in the hard palate and through the soft palate. The middle point of each lateral incision should be opposite the point where greatest tension will be, and their length just sufficient to overcome this tension.

At this stage, and also later, when raising the flaps there is liable to be rather sharp hæmorrhage, but I think it can always be readily controlled by pressure for a few moments either with a small sponge on a sponge holder or with the finger.

The separation of the mucous membrane from the bone must be done thoroughly and with care. The mucous membrane and muco-periosteum must be absolutely freed with proper elevators from the bone, particularly at the posterior border of the bone and around the angle of the notch, and must be separated completely at its attachment from the muco-periosteum of the floor of the nasal cavity. The flaps must be made perfectly loose and free and all tension removed, otherwise union will not be complete. This is the most important part of the operation. It is convenient to have for this purpose a variety of elevators bent about a half inch or less from the end at different angles, in order that the mucous membrane may be more readily raised and with less injury to it.

The sutures are next introduced. As to the kind of suture, I prefer annealed silver wire. Silk, however, answers very well, but I have not had as good success with it. I have not used any other kind of sutures. In adults silver wire is easily passed with the tubular needle, but in the small mouths of children this excellent needle is difficult to manipulate. The easiest plan I know of, whether for silk or silver wire, is to use a slightly curved needle attached to a long-handle and the eye at the point, which, armed with the suture, should be passed from below upward through the flap, say on the left side, and the suture caught with a fine hook or forceps and one end pulled through, and the needle disengaged. Then on the other (the right) side a loop of silk should be passed in the same way, and with this loop the free end of the first passed suture can be drawn from above downwards, which completes it. I prefer to pass the most anterior suture first and continue backward to the tip of the uvula. The sutures may be tied or twisted (if silver) as they are introduced or left till all are passed. In tying the sutures it is very important to see that the raw edges are well everted. After all are tied, if the slightest tension is found to exist the lateral incision should be extended preferably with a blunt-pointed knife, so that absolutely no resistance is left. As to the after treatment, the patient should not be fed by the mouth until vomiting has ceased, and then only with soft nourishing food. The mouth and nose cavities should be well sprayed with a cleansing solution before and after food, say every three hours. The patient should be kept in bed and not allowed to talk. The sutures may be removed in from ten days to two or three weeks.

Selected Articles.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF EXTRAUTERINE FŒTATION, WITH NOTES OF A COMPLICATED CASE.*

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THE development of an ovum outside the cavity of the uterus occurs so rarely that many experienced practitioners have never seen an example ; but, notwithstanding this, the condition is worthy of our most serious consideration, because the accident may present itself for treatment at any moment, and because, when this complication does occur in its most acute phase, it gives rise to results of the most appalling and distressing description, alike to the friends of the patient and to the medical attendant. The importance of the subject is enhanced when we remember that the patient may appear to be, and may really be, in perfect health when she conceives, and even up to the moment when serious symptoms show themselves. She is, of course, in the child-bearing period of life, and she is often a young mother. My last, and perhaps the best, reason for selecting this subject as a matter for discussion is the fact that in a proportion of cases a most deplorable disaster may be turned into a surgical triumph if a rapid diagnosis be followed by prompt treatment.

In considering the subject of extrauterine gestation from a clinical point of view, it is desirable to bear in mind two main facts, namely, that a woman in this pathological state is pregnant, and that the foetus is not in the womb. The signs and symptoms observed are attributable to one or other of these conditions, but those due to the pregnancy and those due to the ectopic growth of the foetus develop more or less independently of each other. The signs of pregnancy may all be present except those found by a physical

* Read before the East Surrey District of the Southeastern Branch.

examination of the uterus. Amenorrhœa may be complete for nine months, quickening may be felt, milk may appear in the breasts, an abdominal tumor may be present in which the foetal heart and foetal movements are readily detected, and at the end of nine months a spurious labor may take place. In fact, the signs of pregnancy may be so complete and so uncomplicated by other symptoms that no thought of the existence of an abnormal condition is aroused until the gestation has continued beyond the usual period. On the other hand, the ectopic gestation may rupture and give rise to most alarming and even fatal complications when the signs of pregnancy are so little marked that the patient may not have the slightest suspicion that she has conceived. Every medical man knows that it may be difficult to form a definite opinion on the question of the existence of pregnancy in the earlier months of gestation. It has even been said that there is no absolutely certain sign of pregnancy except the beating of the foetal heart. In a case of extrauterine gestation the signs are, as a rule, still less definite than in the normal condition. Menstruation frequently occurs at irregular intervals, and a discharge may continue for three or four weeks at a time, perhaps, only one period being missed or delayed.

The uterine mucous membrane develops to a certain extent as if the ovum were in its proper place; but, as the foetal structures do not become implanted on the maternal structures prepared to receive them, part of the mucous membrane is shed very much as it is at term, or in the case of the death of a foetus *in utero*. A complete cast of the interior of the womb may be expelled, or the decidua, when cast off, may be broken into more or less shapeless pieces. When a deciduous membrane is thrown off after an interval of amenorrhœa or irregular menstruation, the patient and her friends are very apt to believe that a miscarriage has taken place, and it may be stated by them as a fact that the patient has miscarried. Thus the symptoms of pregnancy may be complete and perfect, or they may be of the vaguest description.

Although signs due to the ectopic gestation of the ovum may not attract attention until it is found that the pregnancy does not terminate in the usual way by the birth of a child, yet, as a rule, serious complications arise before the end of the third month.

There is little doubt that in the condition under consideration the ovum commences its development in the Fallopian tube in the great majority of cases, if not in all, a view which was urged by Mr. Lawson Tait for many years before it was generally accepted. As my paper must be short, I shall speak as if the tube were the

only place in which an ectopic gestation may begin, and I shall not refer to the peculiarities which may be found when the fœtus is situated in that portion of the tube which passes through the uterine wall.

It has been surmised that an ectopic gestation never occurs except in a diseased tube in which, as a consequence of some inflammatory process, the ciliated epithelial cells have been replaced by non-ciliated cells, by which change the passage of spermatozoa up the tube is permitted, and thus the ovum becomes fertilized before it reaches the uterus. It has also been said that the ovum is frequently impregnated in the tube, and that the absence of cilia is the cause of its developing there. These seem to me merely theoretical assumptions.

The evidence offered is that in cases of ectopic gestation it frequently happens that the patient has never been pregnant, or has been sterile for a long period before the extrauterine gestation occurs. Clarence Webster has advocated the view that a tubal pregnancy is more likely to occur in a healthy tube, and in the case which I shall relate there was certainly no reason for believing that any previous disease of the tube had existed. The patient, who had considered herself, and was considered, perfectly healthy, developed a tubal pregnancy immediately after marriage.

The walls of the Fallopian tube containing the developing ovum show little or no tendency to hypertrophy. If the fœtus lives, the tube invariably ruptures, and this usually occurs before the end of the third month of gestation. The mode of rupture determines whether the patient's life is to be put into immediate danger, or whether she is to go on to a further stage of the disease. There seems to be no irritation due to the presence of the fœtus up to the time of the rupture. Therefore the Fallopian tube does not become adherent to the adjacent structures, and if the rupture takes place at any point where the tube is covered by peritoneum there is nothing to prevent the torn tissues from pouring their blood freely into the peritoneal cavity. Hence the rupture, in addition to a sudden severe pain in the pelvis, induces a state of more or less profound collapse. The patient may faint or remain unconscious for a considerable time. Sweating is profuse, the pulse is small and rapid, the temperature is low, and death from hæmorrhage may occur within an hour or two. Sometimes, however, the tear in the Fallopian tube is so small that the bleeding is spontaneously arrested and recovery takes place. The disturbance may indeed be so slight that the patient does not mention it, or remarks on it merely as a matter of

curiosity. She is only in safety, however, for a time. Another, and perhaps a third, hæmorrhage may occur, and death may be induced rapidly in any of these attacks. This hæmorrhage from rupture of the Fallopian tube into the peritoneal cavity constitutes the chief and most urgent danger of an ectopic gestation. I will, therefore, recapitulate the conditions which lead one to suspect that this accident has occurred. The patient may have had pelvic trouble, or may have been perfectly healthy. She may have borne children or she may not. Some of the early signs of pregnancy, but perhaps only some irregularities of menstruation, have usually been noted within three months of the attack for which advice is sought. At the stage of gestation at which the tube ruptures there is no marked change in the breasts. Very often a decidua has been expelled from the uterus. The urgent symptoms consist of an acute pain referred to the pelvis and the evidences of a sudden internal hæmorrhage which may be slight in amount or so severe as to kill the patient in a very short time. The attack may be induced by some exertion, but this is not a necessary point in the history.

On examining the pelvis of a patient in whom a tubal pregnancy has ruptured into the sac of the peritoneum, some thickening, or a distinct enlargement of one of the Fallopian tubes, will be found; but the blood effused, being free in the peritoneal cavity, is not appreciable to palpation, and it is rarely present in sufficient quantity to give rise to fluctuation on percussion of the abdomen. The uterus is freely movable, and is usually slightly enlarged.

When these conditions are present, and the collapse is so marked that the patient's life is in danger, there is very little doubt that an extrauterine gestation has ruptured into the peritoneal cavity, and the only proper treatment is a prompt arrest of the hæmorrhage by opening the abdomen and ligaturing the broad ligament. I am not an advocate of the view that abdominal surgery is an easy branch of practice. I may, perhaps, be permitted to say I consider it more important in this field than in most that the surgeon should gain experience by assisting others, and by seeing work done by others, before he undertakes to operate himself. Not that a simple ovariectomy, for instance, is necessarily an operation requiring a special education, but the diagnosis of abdominal conditions, even sometimes of a simple ovarian tumor, is often uncertain, whilst the more difficult operations are very dangerous, and may quite unexpectedly tax the resources of the operator to the uttermost. Nevertheless, an ectopic gestation which has ruptured into the peritoneal cavity, so far as the necessity for immediate operation is concerned, is on a

par with cases of profuse hæmorrhage in other parts of the body. The medical attendant must act promptly, however small his experience may be, just as he must perform tracheotomy when he cannot otherwise relieve a case of obstruction of the larynx, and must cut down on an acutely strangulated hernia.

Fortunately, at the stage of the disease under consideration, the operation is often an easy one, so far as the manipulations are concerned. In its simplest form it consists of making an opening into the abdomen through the linea alba, transfixing the broad ligament about its middle, well below the ovary, by means of a needle armed with a double aseptic silk ligature, and tying these ligatures, one on the outer and one on the inner side of the ovary and Fallopian tube. Care must be taken that the two pieces of silk twist round each other at least once before they are tied, so that when tied they shall form one figure of 8 ligatures, and the tube and ovary shall be completely shut off from the rest of the circulation without any danger of the broad ligament being split, an accident which may give rise to serious hæmorrhage. The parts excluded from the circulation must be cut away about a quarter of an inch beyond the ligatures, and for greater security another piece of aseptic silk should be placed and firmly tied in the groove formed by the ligatures already adjusted.

The blood effused into the peritoneal cavity should be removed, and it is usually recommended that this should be done by washing with boiled water or with a six per cent. aseptic solution of chloride of sodium at a temperature of from 100° to 104° F. The washing is most conveniently accomplished by means of a long tube conveying the water from an elevated vessel by a siphon action, the end of the tube being placed in turn in the various deep recesses of the abdominal cavity and the water being allowed to flow freely from the wound until it returns quite clear. But a suitable tube and a properly prepared lotion may not be at hand, and it is then well to remember that the peritoneum is capable of absorbing aseptic blood clot in very large quantities. I consider it safer to leave much clot in the belly cavity than to remove it with a lotion of doubtful asepticity. On one occasion I left a very large quantity of blood clot rather than wash out the peritoneal cavity, and the patient made a complete recovery. Unless it is very clean the pelvis should be drained by means of a Keith's tube, whether washing out has been resorted to or not. The wound should be sewn up in the usual way. The chances of success in operating depend mainly on prompt action, care in preventing septic contamination, and the

avoidance of unnecessary interference with the intestines, which may lead to an ileus or a pseudo-ileus during convalescence.

The question must arise as to how to distinguish the conditions indicating rupture of an ectopic gestation into the peritoneal cavity, and requiring immediate operation from those of the severe fainting attacks which sometimes occur in pregnant women. This may be difficult, but I do not think an error should occur. In slighter cases of hæmorrhage there is always time for consideration, and in cases of doubt a second opinion may be called in. But when a woman is dying of internal hæmorrhage there is no doubt as to the urgency of her condition, and, if the history and physical signs tally with those of an ectopic gestation ruptured into the peritoneal cavity, the abdomen should at once be opened. The question of waiting for the state of collapse to pass off can only arise if the patient's condition is clearly improving. When she is going from bad to worse, nothing will do any good but the immediate arrest of the hæmorrhage. This, of course, is to be followed by strychnine injections, the administration of brandy by injection or by the rectum, the application of warmth to the skin, and transfusion of saline solution if the state of the patient indicates such treatment.

The symptoms of an extrauterine gestation which has ruptured into the peritoneal cavity may, however, run a course which is much less alarming than that I have indicated. It not rarely happens that the effused blood forms a clot which becomes partially organized into a kind of living blood tumor, the outer layers of which are tough enough to prevent further effusion. In many such cases the blood seems to escape from the fimbriated extremity of the Fallopian tube at such an early period of gestation that no sign of an ovum is found. A tumor is formed which is fairly easily removed, its adhesions being readily separated. Such an effusion may of course be absorbed, but there seems to be a tendency to persistence in these clots.

In the following case some of the dangers and difficulties which may arise from an effusion of this kind are illustrated :

On March 21, 1896, I was asked to see a patient, twenty-three years of age, who had been married on December 24, 1895, at which time she considered herself in every way healthy. Her menstruation had been quite regular, not profuse and not painful, the last period before marriage having begun on December 11 and ceased on the 15th. In January she did not menstruate, but on January 25 she began to have a very slight show, which appeared every day for four weeks. On February 21 she fainted when out

shopping, and on the 22nd she was supposed to miscarry. Substances "like bits of flesh" came away with some blood from the vagina, but these were not seen by any medical man. The patient lost blood for ten days, and then, whilst taking her breakfast in bed, she was suddenly seized by severe pain in the lower abdomen, became very sick, and fainted, it being an hour or more before she recovered. The pain persisted, and she continued to feel faint and sick at frequent intervals. A few days after the first onset of pain and faintness the skin became yellow, but it gradually resumed its natural color. The bowels were constipated, and there was considerable tympanites, but both conditions were greatly relieved by enemata.

When I saw the patient on March 21, eighteen days after the most severe attack of pain and faintness, there was slight fullness of the abdomen, which was everywhere resonant. There was a tender swelling rising out of the pelvis, and extending two-thirds of the distance between the pubes and the umbilicus on the right side, and not quite so high on the left. The sound passed two and one-half inches into the uterus, which lay in front of a very tender mass filling the pelvis. The uterus was slightly movable from side to side, and I judged that the swelling was in Douglas' pouch, and not in the broad ligament. If it had been in the broad ligament the uterus would have been more fixed, and either pushed over to one side if the disease had been unilateral, or surrounded by the abnormal tissue if both broad ligaments had been affected. The breasts did not show any of the signs of pregnancy except that the areolæ were slightly darker than is usual in a virgin. This might, however, have been due to the fact that the patient's complexion was naturally dusky.

I expressed the opinion that the patient had an extrauterine foetation which had ruptured, and she was admitted to the Samaritan Free Hospital on March 23. On that day one of my colleagues saw the case with me in consultation, and his view was that the symptoms were insufficient to justify my diagnosis. In the evening of the same day at a debate on extrauterine foetations at the Medical Society I shortly stated the foregoing facts and opinions, because they seemed to illustrate the practical difficulty of making an exact diagnosis in cases of this kind.

The patient continued in much pain, especially when the bowels moved, which only occurred after laxative medicine or an enema had been given. Her temperature ranged between 98° and 100.6° F., and her pulse varied from 88 to 100 per minute.

In further consultation with my colleagues the majority agreed

with me, so on March 27 I opened the abdomen in the middle line below the umbilicus, and found that it was not possible to pass the finger into any part of the pelvis because of adhesions of the intestine to the pelvic peritoneum. The lowest part of the most prominent coil of adherent gut had the ashen gray appearance of the cyst wall of an ovarian tumor when its pedicle has been recently strangulated by twisting, and there was a well-defined line marking off the discolored from the healthy portion of the gut, so that I at first thought I might be looking at a cyst adherent to the bowel. A careful examination showed that the discolored tissue was intestine, and on separating its attachments, which were very strong, from the bladder wall, I opened a cavity, from which there flowed a considerable quantity of thin serous fluid of a rather light color, but neither truly purulent nor offensive. With very great difficulty I separated other strong adhesions of the intestines, the walls of which proved tougher than their appearance led me to expect. A rounded clot behind the right broad ligament was exposed and easily removed; but the ovary and Fallopian tube were matted together and held so firmly down that it was difficult to make a pedicle. There were some tough adhesions towards the outer part of the broad ligament which I could not break through. After tying and dividing them, I found that I had cut off the tip of the vermiform appendix. I at once cleaned the divided mucous membrane, and, after placing a pair of forceps on the proximal end, I removed the tip. I was then able to separate the broad ligament freely on its outer edge and to pull up, tie off, and remove the right ovary and Fallopian tube. On returning to the appendix, I found that the forceps which had been placed on its mucous membrane had by their weight drawn the mucous coat out of the other coats. This made it extremely easy to remove the appendix by the plan recommended by Mr. A. E. Barker, namely, by tying the mucous coat close to the bowel, pushing the ligatured portions inwards and closing the wound in the other coats separately.* There was still much inflammatory adhesion of the bowel deep in the pelvis, but, considering the obviously damaged vitality of the gut, I did not think it wise to do more towards separating the adhesions than was required to free the left ovary and Fallopian tube, which were otherwise healthy. I put a short glass drainage tube in Douglas' pouch, the deep end being placed to the left side, where it seemed to press least on the intestines.

The patient was put to bed in fairly good condition, and the

**British Medical Journal*, 1895, Vol. i., p. 863.

severe internal pain from which she had suffered was immediately and completely relieved by the operation. The highest temperature following the operation was 101.2° F. in the vagina on the fourth day; the highest pulse was 128 the first night. There was no trouble in any way during convalescence, but the condition of the discharge from the drainage tube caused me great anxiety. The amount of discharge was always slight. After the first day, however, its odor was distinctly faecal. As usual, a sponge wrung out of a solution of carbolic acid, and enclosed in a rubber sheet, was placed over the end of the glass drainage tube, the flange of which was passed through an opening in the rubber sheet. It was remarkable that the discharge collected in this sponge was free from odor, whilst that sucked out of the glass tube by means of a syringe and small rubber tube was extremely offensive; and yet, before the dressing was finished, this also was free from odor. It seemed to me that the bowel was not ruptured, and that the odor was due to the passage of gases, or bacteria, through the damaged wall of the gut. I felt certain that the removal of the vermiform appendix was not the cause of the offensive odor of the discharge, because there was a layer of fairly healthy tissue over the ligatured mucous membrane, and no leakage could have taken place from the bowel at this part without causing very serious constitutional disturbance. It had, moreover, been evident at the operation that part of the bowel was almost sloughing, and so in a condition to favor the escape of its gaseous contents. Obviously, it was not desirable to keep a hard glass drainage tube in contact with this gut; but, on the other hand, I judged it imprudent to put in a much smaller tube, and it was possible that if I took the glass tube out with a view to putting in a rubber one of the same size I might not be able to get the new tube into the proper channel, and might do much damage by the change. I therefore left the glass tube in until, after the lapse of nine days, there was hardly any discharge, and this not always offensive. I then inserted the largest rubber tube that would go through the glass tube, and drew out the latter over the former. For a few dressings after this the discharge was as offensive as it ever had been, but, as before, the odor only continued for a minute or two after the discharge was removed from the tube by suction. The tube was gradually shortened, and the discharge ceased to be offensive after April 14. The tube was finally removed on April 25. The lower two inches of it and all the interior were quite black from the action of decomposing material on the red rubber. The patient went home on May 9; menstruation returned in June, and has been

regular ever since. I saw the patient this morning. She considers herself quite well, and looks very well. She has no trouble from the bowels, no pain and no tenderness in the abdomen. The uterus is much more free in the pelvis than I should have thought possible.

Mr. Targett kindly examined the specimen removed. There was no fœtus found amongst the clot or in the fluid. The Fallopian tube was ruptured about an inch from its fimbriated extremity, the abnormal openings being less than an inch apart. The wall of the sac with which they communicated showed degenerated chorionic villi imbedded in laminated blood clot.

The course of a case of extrauterine gestation may turn in still another direction when rupture of the Fallopian tube takes place. This tube marks the upper part of the broad ligament, and is surrounded by the peritoneum forming that ligament in exactly the same way as the peritoneum of the mesentery surrounds the bowel.

The greater part of the circumference of the tube is therefore free in the peritoneal cavity. But the site of the rupture is supposed to depend on the position of the placenta, which eats into and weakens that part of the wall of the tube to which it is attached. Hence, it may happen that the rupture takes place into the cellular tissue between the folds of the broad ligament. The liability to rupture in this direction is doubtless increased by the enlargement of the tube which takes place before it bursts, and which must separate the layers of the broad ligament to some extent. When rupture occurs into the cellular tissue the symptoms induced are less serious than when the peritoneal cavity is opened. The symptoms due to the pregnancy are of course of the same indefinite character referred to above, but the amount of hæmorrhage is limited to the capacity for rapid distension of the cellular tissue and the accident is rarely immediately fatal. On making a bimanual examination the conditions found are quite different in the two cases. When the blood is in the broad ligament a well-marked tumor is found which pushes the uterus forwards and to the healthy side, and fixes it in that position, the greater part of the pelvis being filled by a hard mass, which may be felt also above the pubes. In the management of this condition there is usually time for consideration as to the best line of treatment to adopt, and it is said that many patients recover without operation, the effused blood and the fœtus with its membranes being absorbed. When a cure takes place without operation, however, there is always room for doubt as to the diagnosis, and it seems to me that whenever an extrauterine fœtation is

clearly diagnosed it should be removed, whether it has ruptured into the peritoneal cavity or into the cellular tissue. Even if it were proved that many cases recover without operation, it is certain that a woman's life is not safe with a dead foetus in the connective tissue of her broad ligament. Although, on the one hand, complete absorption of the foetus, its membranes, the placenta, and the effused blood may take place; on the other hand, suppuration may be induced, and the abscess formed may burst into the vagina, bladder, rectum, or small intestine. The risks of such a termination are obviously very great, and if the patient survive it can only be after a prolonged period of exhausting febrile disturbance.

The dangers are also great if, as sometimes happens, the foetus continues to develop after the rupture of the tube. This may occur when there has been distinct evidence of a rupture, but the tube seems sometimes to give way so gradually and gently that no symptoms are induced. It is in such cases that the pregnancy may go on to term without giving any cause for consulting a physician on the part of the patient. Of course the longer the foetus lives the more definite are the evidences of pregnancy.

When the development of the foetus goes on between the layers of the broad ligament, it would seem that its relations to neighboring structures may vary exactly as those of an ovarian or broad ligament cyst vary. On the one hand, the sac containing the foetus may have a distinct pedicle formed by the broad ligament, and in some such cases it has been said—perhaps rightly—that the foetus is not between the layers of the broad ligament, but that it has developed in the ovary itself from the beginning. On the other hand, the developing foetus may separate the layers of the broad ligament, and raise the whole peritoneum of one side of the pelvis and much of this membrane on the other side completely away from its proper connections, so that it is reflected from the posterior abdominal wall on to the sac containing the foetus well above the pelvic brim, and from the anterior wall at a level half way between the navel and pubes.

At any time inflammatory changes may be induced in the sac of an ectopic gestation. Its walls may become so attenuated that their blood supply is dangerously diminished, and then, as in the case of an ovarian tumor, either a rupture takes place, or, more generally, adhesions form to neighboring structures.

If the foetus dies it may be absorbed. Very rarely its fluid parts are absorbed, and the solid parts are preserved in the tissues, retaining a more or less normal appearance for an indefinite period. As a

rule it causes suppuration, and finds an exit for itself through some of the adjacent hollow viscera or into the vagina, causing, of course, great danger before a cure can finally take place.

The vagina and rectum offer comparatively safe lines of egress. On the other hand, I have seen two cases in which the sac of a full-grown foetus had become adherent to everything it touched and a rupture had taken place into the small intestine. It is hardly possible for a patient to have a more hopeless complication. If the chances of the development of inflammatory changes are considered, and also the fact that, whilst the placenta and the sac containing the foetus are small, the probability that the surgeon will be able successfully to remove them is greater than at a later period, it seems to me that in the later stages, as in the earlier stage, of an extrauterine foetation, whenever it is diagnosed an operation for its removal should be undertaken as soon as possible, and no attempt should be made to wait till the child is viable. The dangers to the mother are too great to warrant any such delay. If the child is already viable when an extrauterine pregnancy is discovered, of course every effort should be made to save both mother and child.

The operation necessary must vary with the relations of the sac containing the foetus. If there be a well-marked pedicle, the operation may be as easy as a simple ovariectomy. But if the foetus develops under the peritoneum, and if this membrane is reflected on to the top of the abnormal gestation some inches above the pubes, it is better, if possible, not to open the peritoneal cavity at all, but to extract the child by an incision between the reflection of the peritoneum and the pubes. The foetal membranes must be removed, and a drainage tube should be placed in the wound. In other cases, when the peritoneal cavity must be opened it is often possible to stitch the edges of the incision into the gestation to those of the abdominal wound, and thus to provide efficient and safe drainage.

There is room for a difference of opinion as to whether the placenta should be removed at once or left to separate and come away later. On the one hand, there is the risk of hæmorrhage; on the other, the risk of septicæmia. The surgeon must be guided by the circumstances of the particular case as to which plan he should adopt, and he should chiefly note whether it is likely to be possible to prevent hæmorrhage from the parts to which the placenta is adherent by ligatures or by the application of pressure. If so, the placenta should be removed. If the prospects of being able to arrest hæmorrhage appear small, it may be safer to leave the pla-

centa to separate and come away later. When the peritoneal sac is not opened, or if the incision in the sac containing the pregnancy can be fixed to the incision in the abdominal wall, the cavity from which the foetus has been removed may be packed with iodoform gauze, and a large opening may thus be preserved for the exit of the placenta.

It is impossible in a short space to attempt more than an indication of the mode of dealing with these cases ; and, indeed, my own experience would lead me to the belief that there are few pathological conditions which produce such varied effects as an extrauterine gestation. Except in cases of emergency, therefore, I think this is one of the abdominal conditions which most requires experience before the surgeon attempts to deal with it.

Recently the early stages of an extrauterine gestation have been classed amongst those conditions suitable for treatment by abdominal section through the vagina. So far as my experience goes, the operations required in cases of ectopic gestation may differ so greatly in detail and may be so complicated that the fullest possible exposure of the parts to sight is essential for the safe performances of the necessary manipulations. The vaginal method of approaching operations on the broad ligaments seems to me only available in cases in which it is extremely doubtful whether there is any justification for operation at all. The method is specially unsuitable for a condition like an extrauterine gestation—for such a case, for instance, as the one I have related to you in some detail.

I have not mentioned attempts to kill the foetus by puncture of its sac or by means of electricity, because I consider such methods far more dangerous than an exploratory operation.—*British Medical Journal*.

THE TREATMENT OF LUPUS VULGARIS.

By DR. H. G. BROOKE,

MANCHESTER, ENG.

A CAREFUL observation of the insidious manner in which lupus vulgaris spreads beneath the outer surface of the skin, by means of outrunners and nodules too minute and too deep to allow of merely clinical detection, explains the at times insuperable difficulty of coping with the disease, and the consequent ever-increasing list of drugs and processes which are recommended by one and another as efficient means of doing so. An article by Dr. Jose Schütz ("Zur Behandlung des Lupus Vulgaris," *Arch. f. Dermatologie und Syphilis*, Bd. xvii., Heft 1) has in it a refreshing ring of enthusiasm, but tempered with a salutary strain of caution, and in places of pessimism, evidently born of long experience.

The ordinary lupus patient is an unhappy creature, who spends his youth, and perhaps more, in one long struggle with his malady. All sorts of methods are tried, and only too often, after apparently complete removal, the signs of the old trouble creep on again. That this should be so in a disease which is certainly local in character, or at least in its active manifestations, and which can be destroyed satisfactorily by many means, is mainly due to the difficulty of recognizing the earliest lesions, or by their inaccessibility. Schütz instances a type of case which is by no means rare. A child, which to all appearance is neither weakly nor tubercular, is brought with a dacrocystitis. A long course of the sound apparently cures this, but after a few years a chronic nasal catarrh supervenes, which is very resistant to treatment. A year or two later a few small pustules appear on the seemingly healthy skin of the nose and cheeks. If they are recognized as lupus foci, and not mistaken for mere acne pustules, an internal examination of the nose is made. Nothing more than the signs of ordinary catarrh are seen, for not even the most experienced observer can detect commencing tuberculosis in the nasal mucous membrane. A sound is used, and when pressed but lightly on the septum it suddenly passes through it into the

opposite nostril. The secretion which can be expressed from the lachrymal sac is examined carefully, and finally some tubercle bacilli are discovered.

These are the cases with the least hopeful outlook, for however carefully the complicated network of affected tissues, lachrymal sac and duct, skin, and mucous membrane of the nose may be followed up and rooted out, it can be hardly possible to hunt out all the lines of communication. But in those cases—and they form the great majority—in which the lesions do not affect the mucous membranes, but are situated on the open skin, whether they spread directly by local infection, or suddenly, owing to the action of some acute tubercular process, become general about the body in the form of multiple metastatic patches, their reappearance after treatment can only be due to lack of thoroughness in the process employed or in its execution. The first desideratum is, therefore, a practical and thoroughgoing method of destroying not only the visible, but also the invisible nodules in the skin.

The choice of methods by which this can be effected depends largely on the extent and position of the diseased area. If the lesion is recent and the process would not cause too great a cosmetic disfigurement, Schutz recommends a clean removal of the whole patch, and sewing up of the wound. In my opinion, this recommendation is by far too sweeping. It is true that excision will at once remove the disease, but in how few cases does lupus start in places in which the disfigurement caused by the dragging together of the sides of an open wound would not be very considerable, as on the face, or seriously interfere with the mobility of the part, as on the hands and feet. Then, again, he quite ignores the fact that it is precisely in these very cases in which he especially recommends excision, where the growth is young and fresh, that the best results are obtained by absorption brought about by the persistent inunction of ointments. By means of ointments containing the more penetrating mercurials, the oleate or the pure metal, assisted by the keratolytic action of salicylic acid or mollin, which increase their capability of penetration, I have several times removed completely and permanently superficial patches of lupus on the face and neck, the excision of which would have caused permanent disfigurement. And even if the absorption is not complete, or even not extensive, it is sufficient to limit clearly the area which should be excised, and often to reduce considerably its extent.

He certainly does mention the attempt which was made to promote the breaking up and absorption of the lupus tissue by the

injection of substances hypodermically into the general system. Koch's tuberculin he dismisses summarily in two lines. In this course, however, he is not quite justified, for Crocker (*Clinical Journal*, December 7, 1892; "Diseases of the Skin," 1893) is still satisfied that it both helps to heal lupus sores in young strumous subjects, and to cause the absorption of the hypertrophic scar-like tissue (lupus fibroma of Unna) in a way which no other means is capable of. But, as Crocker insists, it should only be regarded as a subsidiary help, and employed when everything which can be scraped out has been removed, and the floor of the wound cauterized with carbolic acid, salicylic acid, or some like selective drug. When thus used it assists in securing a longer freedom from recurrence, and a larger amount of permanent cure.

Morris is of the same opinion ("Diseases of the Skin," 1894): "Tuberculin seems to modify the lupus process in such a way that the disease becomes more amenable than before to local treatment. My own experience has been decidedly encouraging, all the more that my earlier expectations were grievously disappointed. . . . Further observation has convinced me that tuberculin, while failing by itself to effect a cure, prevents recurrence when the disease has been destroyed by other means." Twelve old cases, which had been treated by all kinds of surgical and chemical methods for years, were subjected to the full action of tuberculin injections, and although they quickly relapsed the after treatment by the various procedures which had previously failed has now resulted in the practical cure of the disease. Morris thus differs from Crocker in using the injections as a preliminary, and not as an after, cure.

Of Hans Hebra's thiosinamin there is as yet but little to be said. In three cases in which I tried it the effect was not marked, but it caused no constitutional disturbance. In one case it seemed to have a beneficial action, but not nearly so decided as in those shown by Hebra himself. Probably his further statements about its action and method of exhibition in the Congress this month may help to determine its real worth. If it be found really to remove the indurations, soften the scars, and clear away the corneal leukomata, as it appeared to have done in some of his cases, it will be a decided addition to the armamentarium.

The extensive transplantations of healthy skin on to the wounds caused by excision of whole lupus patches, either by flaps of epidermis merely shaved off a sound limb, as in Thiersch's method, or by thick flaps embracing the whole skin, as in Wolff's, are more in favor with the surgeon than the dermatologist. I have not had a

favorable experience of Thiersch's process, and what I have makes me agree with Schutz's criticism concerning it, that it is very uncertain in its results, and too dependent for its success on either unknown or unpreventable factors. Unexpected vomiting during the dressing, a restless night, and many other eventualities may easily lead to a complete failure; and in private practice it is not easy to get the patients, or their friends, to submit to the loss of a second slice being taken from another limb. In the discussion on this subject in the British Medical Association, in 1893, it was stated by those who had seen a number of supposed successful cases that the disease was by no means completely removed, and that the cosmetic results were certainly inferior to those produced by slower but less radical procedures.

For the great majority of lupus cases we are thus driven back to the older methods of mechanical removal and selective caustics. The method so long in vogue in the Vienna School of burrowing through the nodules with a point of nitrate of silver, toughened by fusing with nitrate of potash and cooling slowly, may be considered as obsolete. It is tedious, very painful, except in a few cases—the very few which are curable by erosion alone—inefficacious, and may lead to the darkening of the scar by the deposit of silver oxide. Veiel, of Constatt, communicated to me his method of treatment, which I have used many times with good effect. He has since published it in the *Deutsche med. Wochenschrift*, No. 93, 1893. It is as follows: With a sharpened stick of caustic potash the whole of the lupus area is first ploughed up. This must be done quickly, and the surface rapidly dried with lint, or the erosive action is apt to be too great. The wound is then dressed with a ten per cent. pyrogallol ointment, which is kept in place as long as the patient can bear it. When it becomes too painful, a two and a half per cent. ointment is substituted, and under this the wound is allowed to heal up. The healing is slower than under milder dressings, but the scar produced is cleaner and softer. This process certainly gives excellent results. It is distinctly painful, but pain is, unfortunately, a more or less inevitable concomitant to all the operative and caustic measures employed in treating lupus. In superficial cases the necessity for narcosis may be avoided by employing a strong pyrogallol plaster (Beiersdorf's or Turinsky's), which efficiently corrodes the nodules, leaving a slough which heals quite satisfactorily with the weak pyrogallol ointment.

The method which Schutz recommends is, in some respects, a copy, though it seems a quite unconscious one, of Veiel's. In sev-

eral respects it seems to be more efficacious, and his very temperate accounts of his results are very encouraging. It is as follows : Under anæsthesia the whole lupus surface is vigorously scraped, and the surrounding edge for the distance of $\frac{1}{2}$ — $\frac{3}{4}$ inch thoroughly scarified by means of a multiple scarifier. Very free bleeding follows, and as soon as it has been completely stopped by pressure with moist gauze compresses the whole area is painted over with a saturated solution of zinc chloride in alcohol, to which a small quantity of pure hydrochloric acid has been added to keep it clear. The surface turns white, and becomes intensely painful for the next six hours. The pain is best combated by ice compresses. In about twelve hours the whole field of operation swells considerably, and there may be œdema of the surrounding parts, but with the application of boracic lotion dressings this all gradually subsides, and in one or two days the wound is clean. Dressings of pyrogallol vaselin (1 : 4) are next applied, and changed three times daily. On the third day the pain again becomes considerable, and the wound black, sloughing, and bullous. After four days of this dressing the boracic lotion is again used, and in four or five days the wound is again clean. Then, again, another pair days of pyrogallol, the effect of which and the accompanying pain being this time much less marked. With a further two days of boracic lotion the wound is again clean, and then follows the third and last application of the pyrogallol, which now lasts only three days. The wound has by this time generally begun to show signs of healing, and a few days of boracic lotion serve to make it smooth and healthy. Iodoform powder and boracic ointment (I find zinc ointment with ten per cent. carbolic acid clean and very effectual) soon promote complete closure, but the best effect from a cosmetic point of view is obtained by the employment of a mercurial plaster. The whole time taken to heal an extensive wound is from two and a half to three months, and the resulting scar is smooth and soft.

The rationale of the process is the destruction not only of the bulk of the lupus tissue, but the exposure and gradual sterilization of the spores which lie in the minute masses of the round cells and plasma cells, which microscopic sections show to exist round the walls of the vessels in the corium for a distance of $\frac{1}{2}$ — $\frac{3}{4}$ ctm. from the visible lupus nodule. It is these outlying foci which are the cause of the constant relapses, and unless they can be reached and the enormous resistance of their contained spores overcome every treatment remains ineffectual. The zinc chloride opens the whole wound without coagulating the blood, and thus renders possible the

entrance of the pyrogallol which, by its repeated applications, sterilizes by degrees even the most obstinate spores. This, at least, is Schutz's explanation. He condemns the actual cautery, because it coagulates the tissues and stops the way for the after action of chemical agents. But in this assertion he is certainly wrong, at any rate, as far as the use of the punctiform galvano-cautery is concerned, for if the hole produced by the point be filled at once with salicylic acid and perchloride of mercury dissolved in spirit the small partition of coagulated corium is soon removed and the surrounding tissue exposed and satisfactorily cleared of spores and bacilli. He acknowledges the necessity of the cautery in some operations on the mucous membranes where the tuberculous area is with difficulty accessible, but finds that in places such as the mouth a painting with 20—30 per cent. zinc chloride solution every three days is equally effectual. Strong zinc chloride is certainly one of the most effectual applications for lupus tissue of the nose and mouth, but its action is distinctly increased by previous puncturing of the lesions with the cautery points.

The after results in all these cases depend very largely on the patient himself. No operation for lupus, however carefully carried out, can be relied upon to give an absolutely perfect result. Some relapse, however slight, is almost certain to recur, even though it be but one or two minute nodules, and it is only when the patient will allow every recurrent nodule, whilst still in its early stage, to be destroyed at once that the disease can be finally removed. For this purpose I use a match stick, or the cautery point, followed by the application of corrosive sublimate and salicylic acid ; Schutz waits until the bleeding has been stopped by compression, and then applies zinc chloride solution. But whatever process be chosen, the constant control and immediate destruction of recurrent nodules remain an absolute *sine quâ non* of successful treatment.

And, lastly, but of equal or even greater importance than the direct operative attack, the general life and hygiene of the patient must be attended to, his tuberculous or scrofulous tendencies combated, his food, clothing, living quarters, and possibly his employment altered and improved. For only if these conditions are favorable can we look forward to a finally successful result.—*Medical Chronicle.*

Progress of Medicine.

MEDICINE

IN CHARGE OF

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GLYCERIN IN CERTAIN AFFECTIONS OF THE STOMACH.

Sawyer (*Lancet*, July 4, 1896) remarks that some years ago Dr. Sydney Ringer recommended the administration of glycerin by the mouth in certain affections of the stomach. Acting upon his suggestion, he has since treated many cases of painful gastric digestion, such as are usually attributed to subacute or chronic catarrh of the gastric mucous membrane, with glycerin, with satisfactory results. So far as he has seen, this employment of glycerin is not widely extended in professional practice, and he has not noticed further reference to it in the periodicals. The familiar routine seems to be a ringing of changes upon bismuth, alkalies, acids, and digestives. Many cases of gastric maladies of the kind indicated yield to glycerin ; he gives a drachm, a drachm and a half, and sometimes even two drachms, some with a little of simple bitter stomachic tincture, diluted to an ounce with water, thrice daily, between meals.

NEW TREATMENT FOR SCIATICA.

Dr. Negro, from Turin, has successfully treated sciatic neuralgia by digital pressure over the painful points. The method employed is as follows : The patient is placed in a horizontal position, with the lower limbs extended and in contact with each other, so as to completely relax the gluteal muscles. Determine by palpation the

situation of the great sciatic notch, through which the sciatic nerve passes ; apply the tip of the right thumb over the nerve, and above the nail of this place the left thumb. With the thumbs in this position, a very energetic pressure is exerted during fifteen or twenty seconds directly ; slight lateral movements being executed in every direction, but without displacing the thumbs. After an interval of a few minutes the pressure is applied a second time in the same way, this operation being much less painful than the first. After the second compression, the patient is, as a rule, able to walk without great difficulty, and the pain is relieved for a time varying between several hours and a day. The compression is repeated every other day, six sittings being usually sufficient for the complete cure of sciatic neuralgia, a result which Dr. Negro has obtained in the immense majority of cases (100 out of 113) in which he has had occasion to employ this method of treatment.—*Medical Times and Hospital Gazette*.

COLD BATHS IN DELIRIUM TREMENS.

The *Presse Med.* announces that cold baths, eighteen degrees C., have been found very effective in quieting even the most violent attacks of delirium tremens. The patient is placed in the water up to his shoulders, and it is poufed over his head. The bath is repeated two or three times in the same day. The effect was surprising in two cases described, where all other treatment has been without results. A few glasses of warm wine were given afterward, followed by quiet sleep for two hours.—*Jour. Amer. Med. Assoc.*

NARROWING OF THE PULMONARY ARTERY CONSIDERED AS A MANIFESTATION OF TUBERCULAR HEREDITY.

Commencing with the remark that narrowing of the pulmonary artery is commonly looked upon as a cause of phthisis, Victor Hanot, M.D. (*Gazette hebdomadaire de Médecine et de Chirurgie*, March 19, 1896), reports three cases that seem to lead to another interpretation. The first was a male of twenty-six years ; both parents had died of phthisis, and he had always been delicate and, in his youth, slightly cyanotic. Examination of the heart revealed a harsh frémissement at the base, and a loud systolic murmur in the second left intercostal space transmitted towards the middle of the left clavicle. The second patient was a female of twenty-six years, whose father had died of phthisis, and who had suffered from palpitation upon exertion ; at twenty she had had an attack of acute

articular rheumatism, and the cardiac phenomena were the same as in the preceding case ; aside from a slight temporary bronchitis the lungs were normal. The third was a female of sixteen years, whose father had died of phthisis, and whose mother was suffering from the same disease. Two brothers had died of tubercular meningitis in youth. She had always suffered from palpitation, but never had from articular rheumatism ; the lungs were intact ; the heart presented the same phenomena as in the preceding case. Hanot discusses the possibility of this form of stenosis being similar to the congenital narrowing of the aorta such as occurs in chlorosis, and whether both are not manifestations of heteromorphous tubercular heredity. He believes that this narrowing may have absorbed the whole or the greater part of the inherited tubercular tendency, and that it acts therefore to a certain extent as an element of immunity against phthisis.—*Internat. Med. Mag.*

OBSTETRICS

IN CHARGE OF

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ON THE RELATIVE FREQUENCY OF PELVIC CONTRACTIONS.

In attempting to deal with the somewhat minute and precise points as to the forms of pelvic contraction most commonly found in my maternity practice I have thought it best to endeavor to do so, on the figures showing the work, under my charge, of the Royal Maternity Charity of London during the last ten years. The number of deliveries during that period is 38,035; in other words, nearly 4,000 per annum. These deliveries are not confined to any special quarter of London, although they include those which occur in the poorest and least healthy districts. The result of the figures I have to lay before you are corroborative of the statements made by my father and myself in our "System of Obstetric Medicine and Surgery," published in 1884. We there pointed out, in resuming this question, that: "It is quite probable that deformities vary in kind and degree in different countries, as they certainly vary in frequency. In England the poorer classes are better fed, clothed, and housed than in most of the countries on the Continent, and the general hygienic condition is superior. In some districts on the Rhine and around Milan osteomalacia is a frequent result of the miserable conditions under which the laboring classes exist; whilst in England the disease is so rare that many men in large practice have never seen a case. This will account for the richness of the literature upon the narrow pelvis produced by our German brethren, and the meagreness of our own. It is the best answer to the reproach made against us by Spiegelberg. If we cannot vie with the German school in writings upon the subject, it is because they write from abounding materials which with us are wanting. We have

prevented and abolished those conditions. Before the introduction of the Factory Act, some forty years ago, an act which limited the ages at which girls may be employed in this country, deformities of the pelvis were common in London and other large manufacturing towns." In Manchester, where the Cæsarean section was then a common operation, that method of delivery has died a natural death. Pelvic deformity has almost ceased to exist. My own personal experience of over twenty years in difficult midwifery in London is : That pelvic deformities have, and still are, decreasing, as a result of the improved hygienic conditions referred to above. It is to a great extent as a result of the infrequency of pelvic deformities in London that it is impossible for me to give such minute details on pelvic deformities as you seek. Given the relative absence of these conditions it is impossible to make measurements of conditions which we do not come across. I may, however, state, generally, that in London the simple flat pelvis is by far the most common, and next to this the non-rachitic with small conjugate, and the flat rachitic contracted in all diameters. In my experience it has been the exception to see any other form of distortion of the pelvis. I may here state that my father and I have up to the present only seen one case of osteomalacia in London. In the measurement of the pelvis, I have invariably used the hand alone. The finger passed under the pubic arch to the promontory of the sacrum gives a measurement 0.50 less than the true conjugate diameter. When a still more precise measurement is desirable I explore the pelvis with the hand, the patient being in a state of narcosis. This method allows of the most perfect pelvimetry. I may state that during the last ten years there have been delivered under my superintendence in the Royal Maternity Charity of London a total of 38,065 women. Of these eighty have died. Out of this number no woman has been delivered by Cæsarean section. The operation of craniotomy was only necessitated in fifteen cases. Version as a means of delivery was employed in seventy-four cases. The forceps was used to effect delivery in 196 cases.

A rough glance at the above statistics, which, by the way, are trustworthy, affords ample testimony to the statement I have made as to the infrequency of pelvic distortion in London. It must be borne in mind that a large proportion of these contractions of the pelvis are found in our clinic among recently arrived destitute foreign immigrants. Of the cases in which the pelvis was judged to show a conjugate diameter of less than 9.5 cm., there were 150. There were forty-five cases of generally small pelvis, and no case of osteo-

malacia. As I have just remarked, the above figures would make the proportion of women in London with deformed pelvis appear to be larger than it really is. The imported deformed pelvis is an integral factor, but one which is not easy to gauge with absolute precision. The figures which I have laid before you of my experience in the Royal Maternity Charity are equally true as tested by those of the British Lying-in Hospital during the seventeen years that I was attached to that institution as accoucheur. In my opinion the above figures may be viewed with satisfaction. The small maternal mortality of eighty in 38,065 deliveries, the absence of the Cæsarean section, and the small number, only fifteen, of cases in which craniotomy was resorted to, are all witnesses to the benign and preventive influence of better sanitary conditions of life. The moral of this is that the real treatment of contracted pelves consists in preventive treatment.—*Read at the Gynecological Congress, Geneva, by Fancourt Barnes, M.D., F.R.S. Edin., Senior Physician, Royal Maternity Charity of London.*

ALLEVIATION OF PAIN IN LABOR.

At the Pirogoff Congress in Cracow Hr. Bukoemski read a paper on the alleviation of pain in normal labor. After careful consideration he concluded that alleviating remedies did not retard labor, they never did harm and were sometimes of great service. By the toxodynamometer (ether forty-five cases, and chloroform eight cases), he determined that when ether was used the pulse and respiration were unchanged. The labor was shortened, albumen was never seen in the urine, the uterine contractions were more powerful, and involution was improved. Ether was a reliable and non-dangerous drug that did not require accurate dosage. Chloroform rather retarded labor, but was not injurious to either mother or child. Ether deserved the preference. Both were good and reliable.

Hr. Ssawitzki had obtained good results from antipyrine, of which he gave ten grains along with fifteen to twenty-five drops of Tr. opii in enema, and repeated in from two to six hours.

Hr. Dobronrawow purposed a collective inquiry into the alleviation of pain during labor. An inquiry of that kind was being carried on in Russia, and the report would be submitted to the twelfth International Congress of Medicine in Moscow. The proposal was accepted by the Congress.—*Medical Press.*

STRUCTURE OF THE RIPE PLACENTA, AND THE CHANGES WHICH
OCCUR IN PLACENTÆ RETAINED IN UTERO AFTER THE
DEATH OF THE FŒTUS.*

The author (Thomas W. Eden, M.B., M.D., M.R.C.P. Lond., Physician to Out-patients, Chelsea Hospital for Women) commenced by pointing out that the placenta, though an organ of complex arrangement, was composed of the simplest elements, and when its purpose was fulfilled was shed ; in other words, the placenta is a caducous organ. All caducous structures commence to degenerate for an appreciable time before they are cast off ; indeed, the immediate cause of their shedding is that they are degenerated. He then discussed this failure of vitality as evidenced by certain changes in the placental tissues, all the constituent elements of which are affected. In respect of the changes in foetal structures he pointed out that the first and most important change was a slowly-progressing obliteration of a certain number of branches of the allantoic (umbilical) arteries, the affected branches being most numerous in the marginal cotyledons, and the process being of the nature of endarteritis. The corresponding capillaries and veins remained unaltered until the circulation through them was suspended by the ultimate complete obliteration of the arterial branches supplying them, when they became thrombosed. This process might be detected as early as the seventh month, and at term the total number of arteries affected was numerous, though few of them became altogether obliterated except in the marginal cotyledons. The first effect of the diminished blood supply was to cause atrophy and degeneration of the epithelial covering of the villi, which underwent hyalin or fibrous degeneration (coagulation necrosis).

Layers of true fibrin were then deposited over the degenerated areas from the maternal blood. In this way the villi become enclosed in thick layers of fibrinous material and neighboring villi become welded together. Scattered areas of consolidation are thus formed in the spongy placental tissue, to which the name of "white infarcts" has been applied. Some of these may attain the size of a pea or a filbert, and even an entire cotyledon may be consolidated. The structures involved in the areas of degeneration atrophy, and in the larger infarcts there are seen evidences of fatty and calcareous degeneration. He also described another form of consolidation, known as the non-fibrinous infarct, which occurs in the ripe placenta. This form, he suggested, was probably due to blocking of the maternal arteries, and not to foetal endarteritis.

*Abstract of paper read before the Obstetrical Society of London, Nov. 4th, 1896.

Infarction represented, he observed, the extension during the later months of gestation to the placental chorion of changes which occur with regularity in the extra-placental chorion during the earlier months. It is not a pathological change, but is the natural outcome of the processes of evolution and decline. Passing on to the changes in the maternal structures, he referred to the fact that thrombosis of the subplacental sinuses had been described as occurring as early as the seventh month by Friedlander and Minot, but pointed out that as the number of sinuses affected was not great and as there is free anastomosis the intervillous circulation was probably not materially hindered. The superficial (compact) layer of the serotina became the seat of a degenerative process akin to that affecting the chorionic epithelium, the change beginning in the intercellular substance, which is converted into a deeply-staining fibrillated material allied to fibrin. The protoplasm of the decidual cells then becomes involved, and finally their nuclei break up and disappear. Fibrin from the maternal blood is deposited on the degenerated surface. Coiling serotinal arteries may sometimes be found at term, thrombosed for a considerable distance, and veins are often more or less completely blocked by deposits of fibrin.

Changes in the Retained Placenta.—He defined a retained placenta to be one which has been retained *in utero* after the death of the foetus, irrespective of the period of gestation to which it belonged or of the length of time that had elapsed between the death of the foetus and the evacuation of the uterus. The two factors to be borne in mind were (1) the morbid condition which led to the death of the foetus, which may have directly affected the placenta, and (2) the arrest of the foetal circulation, *i. e.*, the death of the villi. Changes due to the first factor he called primary, and those due to the second factor secondary. When the changes were far advanced the difficulty in distinguishing primary from secondary changes was very great. He divided these cases in two groups, (a) cases where the placenta had been retained only for a short time after the death of the foetus, born in a non-macerated or but slightly macerated condition, and (b) cases in which the placenta had been retained a considerable time and the foetus was more or less markedly macerated. In the second group the primary changes are obscured by the superimposed secondary changes, so that the best chance of studying them occurred in the first group. The secondary changes, on the other hand, were most pronounced in the second group, though their beginnings might be found in the first. When the foetus perished the placenta might remain attached

to the uterine wall and the maternal circulation through the intervillous spaces continue, although the foetal circulation through the villi had ceased. Although technically dead, therefore, the villi remained in contact with the maternal blood and were thus preserved from decay, so much so that after retention of several weeks areas of villi might be found which could scarcely be distinguished from those of living placenta. At the same time the villi never showed the least sign of growth or multiplication, and in retained placantæ signs of recent activity were altogether wanting. The condition of the extra-placental tissue formed a marked contrast to that of the placenta. The membranes, the cord and the tissues of the foetus itself necrosed with rapidity because there was nothing to preserve them from the fate of dead organic matter. Where the maternal circulation through the intervillous spaces was maintained, no marked change occurred in the placental villi, but as that circulation was arrested and the villi became cut off from the maternal blood they perished. He then proceeded to trace (1) the arrest of the maternal circulation, (2) the changes which result in the villi, and (3) the changes in the extra-placental tissues. He demonstrated by photographs of sections that the arrest of the maternal circulation occurred by a process similar to that already described in connection with the formation of white infarcts in the living placenta. He insisted, therefore, that it was necessary to examine with great care evidence adduced in support of the doctrine that a vital process such as cell proliferation could occur in foetal tissues after the foetus itself had perished. The obliteration of the intervillous spaces in the retained placenta appeared to be due rather to progressive failure of the maternal circulation from shrinking of the uterus and loss of the stimulus of the growing ovum than to foetal arterial changes. The maternal blood clotted more readily and deposited fibrin more freely than in the living placenta.

The intervillous spaces were first obliterated around infarcts and upon the foetal and maternal surfaces of the placenta. In this manner the retained placenta becomes extensively consolidated, and its tissues display microscopical characters closely allied to those of infarcts and differing widely from those of spongy placental tissue.

He had never succeeded in finding any true connective tissue formation in any of his specimens. Without vascularization there could, he observed, be no true formation of connective tissue, and he did not believe that any occurred. On the contrary, he believed that the blood-clot underwent the usual necrotic changes and ultimately broke up and disappeared. Although the obliteration of the

arteries was irregularly distributed, the placenta which had been longest retained was usually the most extensively consolidated. The changes in the villi, he explained, were practically the same as in the middle and inner zones of large infarcts in the living placenta. They underwent atrophy and necrosis, lost their epithelial covering, then their connective tissue, stroma, and blood vessels, and finally their nuclei. In addition, large areas of placenta might become consolidated by the process of non-fibrinous infarction. Extensive fatty degeneration usually occurred in all the consolidated areas, and calcareous deposits were also abundant.

The most frequent cause of the death of the fœtus in the earlier months of gestation appeared to be some pathological condition of the decidua, and one must be careful to distinguish between primary and secondary changes. In retained placenta of the fifth month or later the compact layer is generally fused with a superjacent stratum, consisting of several rows of villi embedded in fibrin and blood-clot, its structure being barely recognizable. The spongy layer, as a rule, was much less altered, but was generally thinned and atrophied, though the characteristic decidual cells were distinct and the vessels often full of blood. The process of fibrinous degeneration never affected this layer except to a very slight degree, a point of importance, seeing that any process tending to consolidate this stratum would inevitably render separation of the placenta difficult. The amnion, he added, always necrosed after the death of the fœtus, though the changes proceeded less rapidly over the placenta than over the extra-placental chorion. The extra-placental chorion and decidua vera also in all cases, but not so rapidly as the amnion, being longest preserved in the neighborhood of the placental margin, and perishing soonest in parts most distant from it.

The changes in a retained ovum which followed death may be summed up as follows:—(1) Necrosis of the following structures commencing at once; (*a*) the body of the fœtus; (*b*) the umbilical cord; (*c*) the amnion; (*d*) the extra-placental chorion and decidua vera. (2) Gradual arrest of the maternal circulation through the placenta by thrombosis of the intervillous spaces. (3) Necrosis of the various divisions of the placental chorion as they become shut off from the maternal blood; and (4) fatty and calcareous degeneration of the necrosing tissues.

DISCUSSION.

Dr. Horrocks asked how the placenta itself received its nutrition, and how it increased in bulk, that is to say, did the corpuscles of the fœtal blood absorb from the maternal blood the food stuffs neces-

sary for the development of the placental structure, or did the villi themselves bathing in the maternal blood, take out of that blood the nutritive substances they required? Inasmuch as it was possible for a degenerated placenta to grow to a considerable extent, as in the vesicular mole, he thought it was quite conceivable that a retained placenta might grow likewise; in other words, if it could grow when diseased, there was no apparent reason why it should not grow when healthy. Clinically, he had seen cases suggesting that growth had taken place in retained placenta. Looking at the sections, it seemed as if after the denudation of the epithelium the foetal and maternal blood must come into contact. (Dr. Eden pointed out that the capillary wall still remained.) He added that the evidence of the mingling of the foetal with the maternal blood under certain circumstances was incontestable, though, on the other hand, there was overwhelming evidence that, except under pathological conditions, no such mingling took place.

Dr. Griffith protested that they were all desperately ignorant of the pathology of the placenta. Denudation of the epithelium was certainly a common thing in advanced placenta, but what had struck him particularly was the considerable thickness of the tissue which existed between the trunks of the capillaries and the surface of the chorionic villi, so that even if the epithelium were absent there would still remain a separation. With regard to extravasations into the placenta, he asked how there could be an extravasation into what was virtually a mass of circulating blood.

Dr. A. Routh asked which the author considered to be the most important of the changes that took place in the placenta, at or about term? He had noticed that in inducing premature labor, say at the eighth month, the placenta came away without any difficulty, and this raised a doubt whether the changes were as important in this respect as they were believed to be. He was surprised to hear the author say that the blood in the placenta never became organized, and asked whether this was believed to be the case under all circumstances, as, for instance, in cases of central apoplexy of the ovum. With regard to changes after the death of the foetus, one met with specimens of retained placenta where it was quite impossible to say how long it had been *in utero*. He recalled the case of a woman whose husband had been away for two years. She had had repeated hæmorrhages for six months, which had brought her to death's door, and her statement was that she had had a child two years previously, but conception had not taken place since. The pieces of placenta removed looked like pieces of placenta at full term of recent origin.

Dr. Dakin remarked that the author had not alluded to the cysts often seen in placentæ possibly because he did not regard them as physiological. He had seen them in a fairly large number of placentæ, usually situated in connection with infarcts, and containing a clear or grumous fluid.

Dr. Gardiner commented on the curious fact that the foetus was seldom affected by any anæsthetic given at the time of parturition, this being probably due to the non-mingling of the foetal and maternal blood. He referred to a case reported by Tait many years ago, in which after operation for extrauterine gestation near full term, the woman being under ether, the infant was found to be quite unconscious and its breath smelled of ether. He suggested that the structure and position of the uterus in these abnormal cases would account for the occurrence.

Dr. Eden, in reply, pointed out that the fact of there being marked degeneration of the chorionic villi after the death of the foetus in vesicular moles hardly justified the assumption of the possibility of actual growth in the healthy villi. The alleged hypertrophy in retained placentæ had, he observed, been proved to be due only to hæmorrhages into the substance of the placenta, and not to real hypertrophy. There was, however, a pathological condition of placental hypertrophy which led to death of the foetus. The areas of degeneration, as compared with the total placental mass, were infinitesimal, and they could hardly interfere with the functions of the organ. Sometimes, however (in three or four cases), the placenta had perished at the seventh or eighth month, and in these instances the same thing has occurred at successive pregnancies. The only changes noted in these placentæ were those he had described, but on a more extensive scale. The ease with which the placenta separated was due to the spongy nature of the deeper layer of the serotina, which connected it with the uterine wall.

A LONG PREGNANCY.

Ross reports in the *Australian Medical Gazette*, April 20, 1896, a pregnancy of extraordinary length. On September 30, 1895, the patient, a multipara, thought she detected foetal movements. One week later, October 6, she called upon Ross to have her suspicion of pregnancy confirmed. He felt the movements distinctly at that time, and every week thereafter until the day of delivery, May 20, 1896, *i.e.*, 227 days after he first felt foetal movements. Presuming that they can be felt as early as the end of the third month, it would be necessary to add eighty-four days, making 311 days for the dura

tion of the pregnancy. The condition of the child at delivery coincided with these figures. After a long labor the os was dilated, the very thick membranes were ruptured, and a female child weighing about nine or ten pounds was delivered with high forceps. Liquor amnii was scanty, and the placenta adherent. The posterior fontanelle was completely closed, and the anterior one small and firm, and non-pulsating. The appearance of the child indicated a greater age than 311 days, which is the very shortest conceivable duration of this pregnancy.—*Medical News*.

ANTI-STREPTOCOCCIC SERUM IN PUERPERAL FEVER.

Letrain describes the following case in the *Progress Medicus*: "Madame R., aged twenty-five, living at Joen-en-Charnrei, was confined February 7, 1896, by a midwife of the locality. On the 10th she was seized with a severe rigor, and on the 13th I was called in to take charge of the case. The diagnosis was not obscure; the woman was evidently suffering from grave puerperal sepsis, but the immediate source of the infection was indeterminate. I may mention, however, that the lying-in room was reeking with emanations which came from an adjoining privy through an ill-fitting door! At my second visit, on the 15th, the patient's condition had changed for the worse; she was semi-delirious; temperature 104.7° ; pulse 150, small and compressible; abdomen swollen, and very tender on pressure; tongue dry; there was foetid diarrhoea. The case seemed too far gone for curetting of the uterus. In this opinion I was supported by Dr. d'Lageniere Mans, whom I had occasion to meet during the course of the disease. I promptly telegraphed to Dr. Recin, of the Pasteur Institute, who, with alacrity for which I shall be forever grateful, at once gave an order for me to be supplied with the anti-streptococcic serum wanted. On the morning of the 16th, the temperature being 104.3° , pulse 148, five cubic centimetres of the serum were injected. On the 17th, temperature 101.3° , pulse 120, the second injection was administered. On the 18th, temperature 100.4° , pulse 110, another injection of five cubic centimetres was given. On the 19th, temperature 104° , pulse 130, the patient complained of pain at the seat of the first injection, and on examination it was found that at this point there was a slight tumefaction, with redness and puffiness of the integument. On the 20th the fourth injection was administered; temperature 98.2° , pulse 80; the inflammatory phenomenon of the preceding day had disappeared; the patient felt quite well. Another injection was given on the 22nd; temperature 98.6° , pulse 70. The abdomen had returned to the normal condition, sustaining pressure everywhere without

dian. The diarrhœa had ceased, and the patient had now a good appetite. The sixth and last injection of five cubic centimetres was given, and henceforth the case progressed most favorably, and at my last visit on 1st of March I found Madame R. enjoying perfect health.—*The Scalpel.*

GENITO-URINARY AND RECTAL SURGERY

IN CHARGE OF

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THE ANATOMY OF THE ANUS.

The following is a summary of conclusions drawn by Dr. Bert B. Stroud, embodied in a paper on "The Anatomy of the Anus," published in the *Annals of Surgery*. The article is most elaborate and carefully prepared.

(1) The anus presents a general similarity of structure among mammals, but certain features are most highly developed in man, with approximations in the anthropoid apes and in the domestic cat and dog. The *sacculi Horneri* are especially large in the dog.

(2) The transitional epithelium between skin and rectal mucosa is a narrow zone of thick, stratified epithelium, the pecten containing nerve elements which the writer believes to be the peripheral ends of nerves concerned with a special rectal sense. This zone varies in width from about three to nine millimetres. Its caudal border is about at the junction of the ectal and ental sphincters. The cephalic (upper) border is demarkated by the linea dentata.

(3) From the dentations of the pecten in some human individuals there are developed papillæ, composed chiefly of stratified epithelium, nerve elements, and a minimum amount of connective tissue. These are believed to be important additions to the "rectal-sense" apparatus, and to make the possessor physiologically superior to those individuals who have no papillæ.

(4) There are also developed in some human individuals more or less extensive anal pockets just cephalo-peripherad of the pecten. *Sacculi Horneri* are found in their walls. In the cases observed a papilla was located on each side of the pocket. Papillæ and pockets cannot be considered pathologic, since both were found in a child fifteen months old.

(5) When the sphincters are closed the pecten forms the central

part of the floor of the rectal ampulla. And from Andrews' ('95, p. 303) description of Whitehead's operation for hæmorrhoids, I judge that the pecten is excised in this operation. Perhaps this fact accounts for the large percentage of incontinence of fæces resulting from this operation.

(6) The caudal border of the rectal mucosa is at the linea dentata. The character of the epithelium is seen to change markedly here. And the mucosa is thrown into folds like a ruffle.

(7) Clinical observations tend to show that there are few sensory nerve elements in the rectal mucosa, since serious injuries may be inflicted, or the gravest diseases, such as ulceration or cancer, may exist without causing pain. (Kelsey, '90, p. 24.)

(8) Among the nerve elements present may be mentioned :

(a) Small nerve cells with anastomosing dendrites which form the epidermal plexus.

(b) Large ganglion cells in the dermis.

(c) Amyelinic nerve fibres. In the sections examined all appeared to be normal.

(9) The nerve supply of the rectum and anus is derived from both the neuron (central nervous system) and the sympathetic nervous system.

(10) The writer suggests that some rectal reflexes may be due to pressure upon the nerve elements, caused by congestion of the blood vessels in this region.

Clinical observations appear to indicate that reflexes may also be caused by pressure upon irritated papillæ from spasm of the sphincter.

(11) Pockets may be torn by hard fæces, causing a laceration of the pecten. Continued irritation and even ulceration frequently result.

(12) Small hardened lumps of fæces may lodge in a pocket and cause perforation of its floor, or even a fistula.

(13) Irritated papillæ are often injected with serum.

(14) No evidence of sclerosis was found in any of the papillæ examined.

MIXED URINARY INFECTION—PRESENCE OF BACILLI PYOCYANEI IN THE URINE.

LeNoir ("Soc. de Biologie") reports the case of a male patient upon whom lithotrity had been performed one year ago, who pre-

sented symptoms of renal calculus and pyelitis, with urine containing bacilli pyocyanei and the bacteria coli. The bacillus pyocyaneus was in a saprophytic state in the bladder; it had caused no appreciable accident; its presence, however, had to be considered as dangerous. The bacillus pyocyaneus, which is easily cultivated in the normal urine, in the urine of this patient had lost its chromogenic power; however, by the addition of a certain quantity of sugar, this property could be restored.—*Medical Fortnight.*

THE RESULTS AND THE POST-OPERATIVE TREATMENT OF NEPHROLITHOTOMY.

Dr. E. Vigneron, Professor at l'Ecole de Marseille, recently presented the following case. The history of the patient in question is as follows: A male of twenty-six years, who, ever since his youth, had suffered from his kidneys and urethra, his urine containing blood, and always considered as containing also gravel. At the age of nineteen years, he had a gonorrhœa, which had been poorly taken care of, with the result that it had been very protracted and had been complicated with arthritis of the wrist; it is impossible to state whether there was an infection of the superior urinary passages at that time; however, there existed such an infection in 1892, when a physician passed a sound for the first time. At this time pains became frequent in the neighborhood of the left kidney, especially during violent exercise.

The author saw him for the first time in July, 1893; his urine was purulent and bloody, with moderate vesical symptoms, but very severe lumbar pains, especially on the left side. The vesical examination which was made giving no indications which were in proper relation with the extent of the existing pyuria, it was thought that there was a renal infection of probably calculus origin. The patient was told of the necessity of a second examination, and the probable ultimate need of an operation, but he was too much frightened to think of permitting either. However, as the symptoms persisted and became worse, the patient decided to go to Paris, where, in May, 1895, Dr. Albarran practised upon him a left nephrolithotomy. A stone as large as a small egg was found, and extracted from the superior part of the left ureter; above the stone the ureter and the infected part of the kidney formed a vast pouch. This large cavity was left open and drained. On his departure from Paris, the patient was stout, had recovered his powers, did not suffer any more, but had a lumbar fistula, which emitted an abundance of purulent urine;

the urine passed through the urethra was equally purulent. Dr. Albarran recommended him to consult me on his return to Marseilles; we saw him about the end of October, having a lumbar cicatrix with only a very small opening, which opened intermittently. During these periods, lumbar pains and light febrile condition. A probe could be passed, not without pain, to a depth of eighteen centimeters; the passage, enlarged by this exploration, emitted at least 300 grammes of purulent urine; with incision of the fistula, drainage, and the application of irrigations of silver nitrate, 1-500, there ensued immediate disappearance of the pains and the fever, and a general amelioration. A fortnight later, the patient, feeling better, was permitted to remove the drain, and, at the end of some days, the opening closed. On December 6, 1895, the patient had retention; as reincision of the fistula was immediately followed by relief, the opening was kept patent, permitting irrigations, until the end of January, 1896, when the patient disappeared. At that time the pouch had diminished considerably in volume; instead of holding 300 grammes of the irrigating fluid, as it did formerly, it only held 200, while it permitted the probe to be passed only to a depth of twelve centimeters; the urine remained purulent, there being, however, neither pain nor frequency of urination. The fistula soon closed, and from February 16 light fever ensued until March 10, when a more violent attack brought the patient again to our notice. An immediate incision of the cicatrized wound revealed a relatively small pouch, about eight centimeters in depth. We noted that the probe seemed to strike against some concretion while we were exploring the pouch.—*Medical Fortnight.*

PÆDIATRICS AND ORTHOPÆDICS

IN CHARGE OF

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Medical College; AND

WARM BATHS IN THE DIFFUSE BRONCHITIS OF CHILDREN.

Treatment of acute bronchitis by repeated warm baths is advocated by Renant (*Bulletin de l'Académie de Médecine*, 1896). The cases in which this treatment is indicated are these in which the inflammation has not extended to the terminal bronchiole. Renant has treated over a hundred cases, and has not seen a single case develop capillary bronchitis or terminate fatally. Whenever the rectal temperature, which is taken every three hours, is over 102° , the child is immersed in a bath at $101^{\circ}.5$, leaving him in the bath for seven or eight minutes. Water of the temperature of the room is applied to the head. A little stimulant may be given while the child is in the bath. The bathing is to lower the fever and prevent toxic effects. Quinine is given in suppositories, either the sulphate or hydrobromide, morning and evening.

SYMMETRICAL SOFTENING OF THE BRAIN DURING WHOOPING COUGH.

A case of cerebral softening during pertussis is reported by Yorke (*Archives Kinderbeikunde*, 1896, B. xx., H. iii., iv.). While cerebral disturbance of some kind is not uncommon in whooping cough, yet but little is known regarding the anatomical changes that take place in the brain. The rule is that the paralyses, attacks of blindness aphasias, etc., are transient. The case reported was a seven-year-old girl with a tuberculous family history. The girl had had whooping cough for several weeks in moderately severe form, when suddenly the severity of the disease increased, both in the number and the

severity of the paroxysms. Symptoms pointing to brain involvement soon followed. The patient complained of feeling tired, and slept more than usual. In a few days it was noticed that she could not walk well—there appeared to be a weakness of the left leg. At this time the face was also noticed to be involved. It was slightly drawn to the right. Saliva escaped from the mouth. The child laughed a great deal without cause. There was no fever. The pupils were dilated, but responded well. She slept a greater part of the time, yawned a great deal, and cried loudly when she awoke. But little food was taken. There was now, one week after the onset of the nervous symptoms, right-sided facial paralysis. The tongue pointed to the left, and could not be protruded. The uvula pointed also to the left. Swallowing was difficult. The left leg and arm were completely paralyzed. Sensibility was normal. There was no rigidity of the neck or of the muscles of the back. The apathy increased. The patient could evidently understand, but would not speak. During the following four days all the symptoms increased in severity. Cheyne-Stokes' respiration was followed by comatose state and death. There were no convulsions.

Autopsy showed marked congestion of the pia, and a general hyperæmia, with two areas of softening in both hemispheres. The area in the frontal lobe was about two cubic centimetres in diameter; it was located three cubic centimetres from the apex of the frontal lobe, and one and one-half cubic centimetres from its inner wall. The area in the parietal lobe was somewhat large, and occupied the white substance. Microscopic examination showed only the usual inflammatory changes. No micro-organisms were found. There were no tubercles to be seen on any portion of the brain. The cause of the inflammatory process was probably a repeated hyperæmia and stasis, following upon the paroxysms. This in turn was followed by diseased blood vessels, transudation into the tissues, and inflammation. The child being a weakling, and with a bad family history, was unquestionably less able to resist the general effects of the disease.

MORBID ANATOMY OF FRIEDREICH'S DISEASE.

The *Post-Graduate* of July, 1896, has the report of the examination of the cord from a case of hereditary ataxy, by Dana, of New York. The patient, aged nineteen, first showed signs of the disease when eleven years of age. His gait became unsteady, and about one year later the arms became affected. There was steady progression in the

symptoms. Electrical reaction of the muscles was diminished. No paralysis or atrophy existed. There was no disturbance of sensation except occasionally a feeling of numbness in the extremities and a diminution of cutaneous sensibility. Patellar reflex and ankle clonus were absent. There was occasional incontinence of urine. The intellect was but little affected, and memory was good. The inco-ordination became much more apparent whenever the eyes were closed. The patient had frequent attacks of vertigo, preceding attacks of syncope. Three attacks were observed. At the commencement of these attacks he felt dizzy, the head swayed, the face became pale, the radial pulse disappeared, the muscles relaxed, and unconsciousness supervened. The relaxed condition (with imperceptible pulse and respiration) lasted about half a minute, and was followed by a sudden tonic convulsion, with opisthotonos, lasting about one minute. Then consciousness returned, and he complained of pain in the back. Post-mortem, the spinal cord was found reduced in size, and flattened antero-posteriorly. The pia mater was much thickened. A sclerosis of the posterior and lateral columns existed through the whole length of the cord, but was more marked in the lower portions. This sclerosis involved nearly the whole of the posterior columns, and in the lateral columns the crossed pyramidal tracts, the direct cerebellar tracts, and, to some extent, the area of the ascending lateral columns. A margin of sclerosis enveloped nearly the whole circumference of the cord. Another peculiar morbid change existed throughout the whole length of the cord. This consisted in the presence of holes (as seen in the sections) varying from a half mm. to 2 mm. in diameter. These holes were seen to be distributed in both the gray and the white matter, but chiefly in the white matter. Dana believes them to be dilated perivascular spaces, but could not find any one of them in which the remnant of a vessel was present. No such vacuolization was observed in three other spinal cords from cases of Friedreich's disease which were examined by Dana. The brain and nerves in the present case could not be examined.

A CASE OF SUPERFICIAL GANGRENE.

A curious case of gangrene of the skin and superficial tissues is reported by Rachford, of Cincinnati (*Archives of Pediatrics*, December, 1896). The patient was a male infant of seven months. Until the present illness the child had always had remarkably good health, and was fat and well grown. The father of the child was not strong, and had syphilis. The mother was in every way healthy.

On January 20, at 8 a.m., the child was bathed and dressed, and was quite well. At 9.30 a.m. it began to cry, and continued to do so for two hours. At 11 a.m. the mother undressed him in order to investigate, and found a "blue-black" spot about the size of the palm of her hand on the left buttock. The child was seen by the reader of the report at 2.30 of the same day. The child was found to be perfectly normal in every way except that over a circular patch of three and three and a half inches in diameter the skin was black and plainly gangrenous. There was not the slightest history of trauma of any kind. The gangrene was perfectly dry; there were no blebs, and the outline was distinct. The spot remained of the same size from the time it was first seen, and remained dry. No other spots appeared.

January 23. Child in perfect health except for gangrenous spot.

January 27. Still well. Temperature from beginning has been normal.

January 30. Contracted influenza; temperature 102.5°.

February 8. Dead skin came away. Slough involved only skin and a little subcutaneous tissue.

February 21. Rash over neck and shoulders and back; erythematous in form. Given mercury and chalk night and morning. Child has failed very much.

Mercury and chalk continued for six weeks.

May 9. Child seen after an interval of six weeks. Baby seems well except for a well-marked erythematous rash and the scar on the hip. Again put on mercury and chalk, one grain night and morning. Last report child was quite well.

The author would attribute the gangrene to sudden vaso-motor spasm occurring in a limited area, and continued long enough to obliterate the blood vessels. Whether or not the syphilis had any relation to the gangrene the author is unable to say.

PATHOLOGY AND BACTERIOLOGY

IN CHARGE OF

JOHN CAVEN, BA., M.D., L.R.C.P. Lond.,

Professor of Pathology, University of Toronto and Ontario Veterinary College; Pathologist to Toronto General Hospital and Home for Incurables;

AND

JOHN J. MACKENZIE, B.A.,

Bacteriologist to the Provincial Board of Health;

ASSISTED BY

JOHN A. AMYOT, M.B. Tor.,

Demonstrator of Pathology, University of Toronto; Assistant Surgeon to St. Michael's Hospital; Physician to House of Providence.

THE BACILLUS TUBERCULOSIS IN THE NASAL CAVITIES OF HEALTHY* INDIVIDUALS.

(Per J. Strauss; *Rev. de la tuber.*, October, 1894.)

Experiments were made upon sound individuals who frequented wards, etc., occupied by tuberculous patients.

Results: Quite positive.

Technique. Wads of absorbent cotton were wound upon small sticks of wood, and the wipers so formed sterilized in autoclave. Nasal cavities were wiped out with these wipers and the wads then introduced into tubes of sterilized water or bouillon; agitation and squeezing upon side of tube; six or eight tampons were thus used in each tube in order to collect a considerable amount of material from the nose in each.

The contents of the tube so infected were injected into the abdominal cavity of sound guinea pigs.

Twenty-nine experiments were made.

Results: Twenty-nine cases. In seven cases the eight pigs died early of septicæmia, or purulent peritonitis; in thirteen cases the animals gave no sign, and when killed were found healthy; in nine cases died or were killed in from three to five weeks; tubercular lesions found arising from injection point; bacilli demonstrated in all.

Healthy means free from tubercles.

Thus about thirty-three per cent. of those examined, though in perfect health, carried tuberculous bacteria in nasal mucosa.

Of these nine cases, six were "infirmier" living in hospital; of three chronics (non-tuberculous) living in hospital for some months, one gave positive results; of seven students passing several hours a day in hospital, two gave positive results.

V. Cornet; *Die Verbreitung der Tuberkelbacillen Ausserhalb des Körpers*; *Zeitschf. f. Hygr.*, 1888; t. v., p. 191.

PRELIMINARY REPORT UPON THE DISEASE CAUSED BY
TSÉ-TSÉ FLY.

This disease is called by the natives of Zululand, nagana.

The tsé-tsé is a small fly the size of the ordinary cattle fly of this country. The results of its puncture are sufficiently distressing, however, whether it is killed upon the spot or allowed to fill its abdomen with blood. The pain and redness which follow its wounds are like those caused by the common fly.

The disease called nagana is invariably fatal to the horse and the dog, but the pig and the cow recover sometimes. It is characterized by fever, infiltration of the subcutaneous tissues of the neck with coagulable lymph; also of the abdomen and extremities and extreme emaciation; rapid destruction of red blood cells, and the constant presence in the blood of a hæmatozoon, closely resembling, if not identical, with trypanosoma Evansi, found in a similar disease in India. The connection between the parasite and the disease seems undoubted. It appears in the blood with the onset of the disease, increases as it becomes more acute, and disappears with recovery, or is seen in enormous numbers at death. Bruce found in fatal cases 73,000 per c.c. of blood.

Description. A transparent, elongated cell, very mobile, showing a gliding, serpentine movement amongst the blood cells, and appears to live upon them, or, at least, displace them. In thickness it is about one-quarter of its (blood cells) diameter and to three times its length. It has no resemblance in form to the parasite of malaria, but some of the symptoms are similar, and it has been thought that one could be attacked by nagana in the dangerous areas, as with malaria in ague districts. This idea was the more natural since the characters of the nagana and malarial districts resemble each other. This hypothesis seems incorrect, and Bruce appears, without actually proving, to have rendered highly probable the constant intervention of the tsé tsé in the spread of the disease.

The bite of one of these flies is ordinarily without danger, but if

the fly has beforehand sucked the blood of an animal infected with nagana and carrying the hæmatozoa its proboscis dart becomes coated with blood carrying hæmatozoa, and it then inoculates with the disease any sound animal which it may (soon?) afterwards pierce. Experiments made with dogs (very susceptible to the disease) support these ideas completely. Flies were shut up in a sack of gauze, and the sack laid upon animals already ill of the disease; the sack was then transferred to a sound animal. Several days later the healthy animal showed all the ordinary symptoms of the disease and the parasites appeared in its blood. If one inoculates a healthy animal with blood of a diseased animal, the result is the same. A good proof that neither by inspired air nor by food is infection taken up, but, as described above, would be the allowing flies collected in a dangerous district to pierce an animal living in a perfectly safe territory where the disease was not known. Bruce made several experiments of this sort, and finally succeeded in conveying a nagana to a sound horse, which he kept upon the healthy plateau of Obombo.

It seems without doubt, then, that the tsé-tsé is but a harmless fly, which acts as a *conveyer* of a *dangerous germ*.—David Bruce.

TUBERCULOSIS IN PARROTS.

Parrots seem to be very liable to tuberculosis—so much so, indeed, that of 154 parrots treated in the Veterinary Institute of Berlin 56 (equal to 36 per cent.) showed tuberculous symptoms. As the tuberculo's of these birds is caused by a species of Koch's bacillus it is possible that the disease may be transmitted to their owners or other persons. Dr. Brantiz, while attending a patient suffering from tuberculosis, observed that the parrot in the house was ailing, and as examination by a veterinary surgeon proved that it was the subject of tubercle he directs attention to the possibility of tuberculous disease being acquired from these domestic pets.

Editorials.

ANNOUNCEMENT.

THE CANADIAN PRACTITIONER has been purchased from The Bryant Press by The Practitioner Publishing Company, and the business management of the journal will, in the future, be in the hands of Dr. Edmund E. King. It will generally be conceded that Mr. Bryant made a decided advance when he changed the old form of publication in January, 1893, and adopted the methods under which it has appeared since that date. The changes added materially to the cost of publication, but have proved so satisfactory in all respects that the present proprietors will continue what we may call the Bryant methods.

The editorial and literary staff will not be greatly altered, excepting in the respect that some additions are likely to be made within a few months. Our policy in the future will be similar to that which has prevailed in the past. We are glad to say that our association with Mr. Bryant has been exceedingly pleasant, and we can only regret that, on account of increase of work in other branches of his business, he felt impelled to part with THE CANADIAN PRACTITIONER. His great desire was to publish a thoroughly respectable and high-class medical journal. No one could aim higher—we will endeavor to aim as high.

THE COUNCIL PETITION.

EVERY member of the profession in Ontario has received from the Registrar of the Council a form of petition to the Legislative Assembly of Ontario, together with a circular explaining the details of the same. We sincerely hope that physicians will not treat these with carelessness and indifference. We believe that the matters referred to are of vital importance to the profession. We cannot discuss in detail all or any of the questions referred to in the

circular ; but we desire simply to call attention to clause "first," in which Mr. Haycock's proposed amendment in the Legislature is mentioned. Undoubtedly grave danger of a practical destruction of the Council existed at that time, as those who were present in Toronto during the session of 1895 well know. We very cordially support the action of the Council in distributing these petitions ; and we desire now to ask each one of our readers living in Ontario who has not yet responded to sign his petition *at once*, enclose it in the sealed envelope, and post it without delay. We recommend those in doubt to read carefully the circular, as we consider that it makes very clear the reasons which should induce all physicians of all parties to support loyally the Council in its present action.

THE CULLINGWORTH FUND.

IN our last issue we referred to the case of Beatty *vs.* Cullingworth. Miss Beatty, a hospital nurse, sued Dr. Cullingworth, the senior obstetric physician to St. Thomas' Hospital, for damages because he removed both ovaries because he found them diseased after he made his section. We expressed the opinion that the verdict in Dr. Cullingworth's favor was just and right ; but, at the same time, we thought that it would only be a poor compensation to the defendant for the worry and expense necessarily associated with the trial.

We are very glad to be able to announce that his brother practitioners in Great Britain promptly started a subscription towards a fund to reimburse Dr. Cullingworth for the expenses he incurred during the trial. The subscriptions came in so rapidly that the fund in a short time became sufficiently large to cover the whole expenditure, and the organizers of the good work have announced that no more subscriptions will be received.

ROENTGEN RAYS AND THE BLIND.

THE daily press, more especially the sensational papers, have been publishing glowing accounts of sight restored by "X" rays. The physiological impossibility was apparent, but in this age of wonders nothing should be pooh-poohed without investigation—we decided to make an experimental test of the matter and demonstrate its absurdity or prove its possibility before denouncing it.

Sixteen persons, male and female, young and old, those with eyes and those with the eyeballs removed, those blind from birth

and those recently blind, those totally blind and those partially blind, those with detached retinae, and those with opacities of cornea and lens, were experimented with. An absolutely negative result was the case in every instance excepting those in which daylight was perceptible. In these a luminosity was apparent, but no shadow was produced by the rays. The apparatus employed was up to date in every respect. The publication of certain unverified experiments as established facts raises the hopes of the most helpless creatures to such an extent that the depression following is painful to behold. It is cruel to a degree. Those who are unfortunate enough to be deprived of sight should be more thoughtfully treated than to be made the tool of some ignoramus who is hunting for cheap and despicable notoriety. The press should demand some authentic verification of such matters before publishing them as demonstrated facts.

LISTER.

LISTER and Listerism will not be forgotten as long as the science of surgery exists. We have heard much of Mr. Lister as a scientist and a surgeon. His country desired to honor him, and made him Sir Joseph Lister, Bart. The medical world was glad to see him thus honored, but valued more the great work he had done than all the well-deserved honors which he had received. A recent cablegram from England informs us that Sir Joseph Lister exists no longer, but that Lord Kinneir lives in his room and stead. In other words, he has been elevated to the peerage on account of the great services he has rendered mankind by his practical researches and his clinical work in aseptic and antiseptic surgery. We believe this is the highest honor which has ever been conferred upon a physician or surgeon in Great Britain. We are certainly delighted to see Lister thus honored ; but why did they take away the name we have learned to love so well ? Why didn't they make him Lord Lister instead of Lord Kinneir ? Perhaps peerage ethics would not admit of such a thing.

Well Lister, or Kinneir (call him what you please), is coming to Canada this year. He will be present at the meeting of the British Science Association which will be held in Toronto, August 18 to 27. It will be remembered that he presided at the last meeting of this society, which was held in Liverpool in August of 1896. What sort of a welcome will the profession of this city and country extend to this truly great man ? The subject has been discussed in a quiet

way by individual members of the profession ; but, so far as we know, has not been officially considered by any society or corporate body. We are not prepared at present to suggest any definite plan ; but we are very glad to know that some of our leading men in the profession are determined that this distinguished scientist will receive a hearty and royal welcome when he comes to Toronto.

MEDICAL JOURNALISM.

MEDICAL journals are as a rule considered necessary for those members of the profession who wish to keep up to the times ; and it is generally conceded that their wants in this direction are pretty liberally supplied in these modern days. This continent has lately produced something new in the shape of a free journal which is generally worth the subscription price. The managers of this new journal are working in the interests of the advertisers, and sometimes furnish us with a strange mixture of reading matter, reading notices, and advertisements all jumbled together in a heap. This acephalous monstrosity has not proved an unqualified success, even from the advertiser's point of view. The free journal has met with another difficulty in the shape of postal regulations, which interfere with the free passage of this sort of cheap literature. In consequence of various drawbacks it has been deemed advisable to make slight changes. A nominal subscription price is added, which possibly the publishers may hope to collect. The modified product looks, it is thought, more respectable ; and reading notices, describing in glowing terms the virtues of certain preparations, are ingeniously mixed up with the ordinary matter in such a way as to give the unwary the idea that such words of praise are endorsed by the regular contributors and the editorial staff. Respectable practitioners are asked to lend their names in order to give some weight and influence to this modified form of the modern product. In many instances they comply, apparently without considering that they are thereby aiding and abetting illegitimate journalism. We have sometimes been amazed to find practitioners of good standing in all other respects giving their assistance to journals that are neither legitimate nor respectable, as those terms are generally understood among the best journals and journalists in all parts of the world.

A fifty-cent, or a dollar, medical journal may or may not be respectable ; but it is certainly important that those who give their

names and their influence to a medical magazine should be certain that such magazine will be thoroughly legitimate both in a business and a literary way. The profession have seen the free journal sufficiently often to grow weary of it. We are not sure, however, that the semi-respectable journal, if such a thing can have any actual existence, is thoroughly understood by a large class of practitioners, who have no desire to offend medical ethics in any way, and yet do violate professional consistency by assisting doubtful ventures in medical journalism. We will not now make any reference to any special medical journal or journals; but we desire to say that we strongly object to any degradation of medical journalism in this country. The publishers and editors of certain medical magazines in Canada have steadily endeavored to raise the status of their productions for many years; and we think that it is in the interests of higher medical education, and also in the interests of both readers and advertisers, that their efforts should be encouraged by all regular and respectable physicians.

BRITISH MEDICAL ASSOCIATION.

MONTREAL MEETING.

THE local committee in Montreal are still working in the interests of the next meeting.

We understand that the authorities of the British Medical Association in London have also been very active. They have addressed circulars and forms of application for membership to every practitioner in Canada, inviting membership of the nearest local branch. We are desirous to state that, if there are any who have not received this prospectus, the local branches at Montreal (2204 St. Catherine street), at Toronto (Dr. W. B. Thistle, McCaul street), at Halifax (Dr. G. C. Jones, 136 Hollis street), at Victoria, B.C. (Dr. G. L. Milne), and at Ottawa (Dr. C. P. Dewar) will be glad to forward all information and forms of application.

The branch of the association at Ottawa was established on the 15th instant. Dr. C. R. Church was elected president; Dr. L. C. Prevost, vice-president; Dr. W. C. Cousens, hon. treasurer; Dr. C. P. Dewar, hon. secretary; Sir James Grant, Drs. H. P. Dwight, W. R. Bell, A. J. Horsey, and P. A. MacDougall, council.

The Toronto branch was also established in November, with Dr. I. H. Cameron as president; Dr. W. J. Wilson, vice-president; Dr. Machell, hon. treasurer; Dr. W. B. Thistle, hon. secretary; and with the following members of council:

Drs. Allen Baines, John Caven, Charles Sheard, A. McPhedran, and R. A. Reeve. Drs. Wilson, Baines, and Caven are Presidents of the Medical, Clinical, and Pathological Societies of Toronto respectively.

At the annual meeting of the Montreal branch thirty-one new members were added, and in the ten days that have elapsed since then close upon forty further applications have been received by the secretaries in Montreal.

We may again point out that members may be transferred from the Montreal and other local branches to other branches which may be formed in their neighborhood during the ensuing months. It is in all respects advisable that members belong to the branch in their immediate vicinity.

That the Montreal City Council is most anxious to render help is evidenced by the fact that \$3,000 to this end has been inserted among the items of the loan, for which the city seeks authorization in the Quebec Government.

Among the local entertainments to be given to the members of the association and its guests at the meeting will be the excursion to Ste. Agathe and Monte Tremblante in the lovely country fifty miles north of Montreal. An afternoon excursion down the river in one of the finest boats of the Richelieu and Ontario Navigation Company; a similar excursion to Ste. Anne and down the Lachine rapids, and an entertainment upon the mountain—these will be given by the local branch.

THE PHYSICIAN IS AT THE MERCY OF THE DISPENSER
—THE DISPENSER IS A NECESSITY TO THE
PHYSICIAN.

IT may be owing to recent hard times or a public demand that the sale of patent nostrums and cure-alls have received such attention from the druggists. Departmental stores have established complete drug departments, cut prices, and otherwise interfered with the drug trade to such an extent that the existence of the legitimate druggists is in danger. No business can be carried on without a profit. Large departmental stores can afford to accept a smaller percentage of profit than stores dealing in any one single line. Competition is usually healthful, but when it comes down to cutting prices in dispensing prescriptions a very serious condition of affairs exists.

There are honest and dishonest druggists, and the dishonest ones

will *cut* to meet the *cut* from the departmental stores, and quite likely the patient and doctor will both suffer. The *cut* by the dishonest druggist will be in the shape of substitution or using inferior drugs. The conscientious druggist will simply say that a prescription cannot honestly be filled for the price and decline to dispense it. The departmental store will fill it, charge low to secure custom for the general store, and thus *cut* the legitimate druggist—an absolute necessity—out of his business. The few cents saved on the prescription may be profit, but if it is at the expense of quality it is a distinct loss. The physician has a right to know by whom and how his prescription is dispensed, because there are honest and dishonest druggists. He has a right to demand that some thoroughly competent and reliable dispenser compounds it. He has also a right to see that his patients are not overcharged.

Druggists have not treated the physicians fairly. Some of them placard their stores with Bunyon's Remedies, Dr. Blank's Sure-Cure-All, etc., in such a manner that physicians become disgusted. They counter-prescribe, fill repeats without orders, or make up an extra bottle for a friend, and do many other things that are not right. They say that the doctor does not treat them fairly, by allowing his prescription to be filled anywhere. There exists overcharging by druggists and percentage receiving by doctors, but we believe that these are only in rare instances. As a rule, charges are fairly made by honorable druggists. We believe that in a city the size of Toronto there is room for three or four, at least, thoroughly reliable dispensing chemists, who will handle *no patent nostrums whatever*. No objection could be raised to keeping perfumes and toilet articles, but in every other respect they should be simply dispensing chemists. If such announce themselves, we believe that they will receive the support of the physicians. Who will try the experiment?

Meetings of Medical Societies.

THE TORONTO MEDICAL SOCIETY.

THE regular meeting of this society was held in the Council buildings on the evening of the 7th of January. Dr. W. J. Wilson presided. The minutes of the previous meeting were read and adopted.

Dr. G.A. Peters read a paper on

PROCIDENTIA RECTI.

It began with a discussion of why and how this condition, a normal phenomenon, occurs in the horse. The points of difference between prolapse and procidentia were referred to. He then gave a classification of the forms of the latter condition, according to Allingham. Water-color drawings were shown which illustrated the various forms. Authorities differed as to the age at which this condition was most usually found. The various causes were then given. Methods of cure, both palliative and radical, were then detailed. The history of a case treated by the essayist was then read. The patient was a boy aged two years and seven months, admitted to the Victoria Hospital for Sick Children in September, 1896. The anterior wall of the abdomen below the umbilicus was wanting, there being ectopia vesicæ. The symphysis pubis was also absent. The doctor described the anomalous condition of the genitalia. The posterior wall of the bladder bulged forward as a florid fungating mass, irregular in shape. It was ulcerated in parts, and very tender and sensitive. The mother said that the child had always strained severely when the bowels moved. Prolapse was noticed about eighteen months ago. When first observed the bowel came down only one inch. The protrusion rapidly increased in size and came down with each evacuation. At first it was easily returned, but soon refused to remain reduced. It had been down almost continuously for one year. When the child lay quiet the protrusion measured about four inches in length, but when it cried it reached eight inches below the anal

ring. It had the shape of a truncated cone. In the quiescent state the color was pinkish, but during straining, or if exposed to the air, it became purplish. There were a few spots of ulceration on its surface. Some sloughs also. There was a small depression just external to the external sphincter. There was great pain and straining when the bowels moved, the child showing the most intense agony.

Before referring to the particular treatment used in this case the doctor referred to the treatment of prolapse and procidentia in general.

In prolapsus recti, first remove any cause—such as pin worms, stone, phimosis. The child should be made to stand or lie down when the bowels moved. If the bowels protruded the application of cold or astringents should be made. In the severer forms applications of strong nitric acid should be made, the patient being anesthetized.

The treatment of procidentia was more serious. Many cases were intractable and incurable. Sometimes the nitric acid treatment would effect a cure. Astringents should be avoided, and injections into the tissues around the perinæum should not be made.

One surgical procedure was to remove elliptical or triangular portions of the mucous membrane and stitch the edges together; another process was to remove such pieces with the clamp and cautery. Another procedure described was that of removing the whole mass by means of an elastic ligature. The ligature was applied a short distance from the anus, made tight enough to shut off the circulation. An incision was then made into the perineal sac and any hernial protrusion reduced, the incision being made on the distal side of the ligature. Having reduced the protrusion, the ligature should be tightened; next a cannula is introduced from before backward through the whole mass on the outside of the ligature. Each half of the bowel can then be tied off by an elastic ligature, leaving the end to slough off. The method adopted by Treves was to dissect off the mucous membrane and stitch the edges to the skin. This had met with a good deal of favor. Lange's method, in which the coccyx is removed, was described and commented upon. Another method was to open the abdomen anteriorly, and stitch the rectum after it had been drawn up to the abdominal wall. The method employed in the case reported was to make an anterior abdominal incision, draw up the rectum, narrow the intussusciptions by stitching, so that two lines (longitudinal) on the bowel would be approximated and thus make a fold, the sutures being left long, and subsequently

stitched through the anterior abdominal wall, thus suspending the rectum. Thus far, some three weeks, the patient was doing well.

Dr. John Hunter spoke of the value of a mixture containing magnesium sulphate, morphia, and aromatic sulphuric acid in cases of prolapse.

Dr. H. B. Anderson related the history of a case which had come under his observation in which the cautery had been used. A good recovery followed. Dr. Anderson discussed some other points in the paper.

Dr. H. B. Anderson presented a tubercular testicle for examination. The specimen showed an involvement of the epididymis and cord.

Dr. W. J. Wilson presented, for Dr. Henry, a surgical kidney and its mate which was actually congested.

The specimens were from a young woman aged twenty. She consulted her physician for irritability of the bladder at first. After a time she was attacked with a sudden severe pain in the region of the left kidney, became feverish, was put to bed, and never was up afterward. Examination revealed an enlargement in the region of the pain, and cystoscopic examination showed pus oozing from a ureter. Death subsequently ensued.

Dr. William Oldright read a few notes on some points in midwifery practice. He made it a point always to examine the urine of the patient he was asked to attend in confinement. He would call the patient's attention to any vaginal discharges and emphasize the necessity of frequent cleansings. It was important to secure an intelligent nurse; this the doctor should superintend; if not very often, he would find one employed who had no ideas of asepsis. The introduction of the hand prior to the application of the forceps to dilate the vaginal outlet was a useful device; in this way the time of descent of the head would be greatly lessened; care should be taken to apply the forceps in such a way as to impinge on the face. Due deliberation should be observed in this important procedure. The position should be noted, so as to avoid delivery of the face to the pubes; as was often done, time not being allowed for turning to take place. In version one should not be particular to secure both feet, as one was enough. The speaker advised a plan he uses to support the perinæum, viz., with both hands around the orifice at the same time the head may be directed in such a way as to avoid undue stretching of the weak places. Another important point was to determine after expulsion of the placenta whether any membranous shreds were left in; this would often save hours of painful wait-

ing for oozings of blood to cease. In a case reported the speaker said that after eight days of normal convalescence the temperature rose to 104° , with other symptoms of sepsis. After the use of a blunt curette and irrigation with an antiseptic solution, patient did well.

Dr. Oakley said that under the teaching of Meggs, who held that meddlesome midwifery was bad midwifery, he believed he had erred in being too cautious, and leaving the progress of labor in many cases in his earlier practice too much to nature. He thought it was better to err on the side of boldness rather than wait too long for delivery to take place. He thought it required a great deal of thought to perform Crede's method of expelling the placenta properly. In his early practice he used to make traction on the cord. He expected a good many of the older men had done the same. It was probably wisest, on the whole, to allow the placenta its own time to come out. He had been taught to apply a folded napkin to the perinæum while the head was coming down. This, however, tended rather to laceration than to preservation. Better, he believed, to introduce the four fingers of one hand between the coccyx and the rectum and press downward and forward, using the other hand to bring down the head under the symphysis. It was important to keep the head well flexed. As to cutting the cord, it was his custom to wait until it was flaccid. He thought the use of ergot in the third stage was of benefit, and should not be given before. Dr. Fletcher asked as to the advisability of attending to lacerations of the cervix immediately after labor. He had observed this lesion in two cases. Instead of anæsthetizing under chloroform to do perineal repair, he had found that local obtunding with cocaine did very well.

The president, referring to the necessity of inquiring into the matter of who the nurse was, related a case of puerperal sepsis with death, where the nurse employed was a neighbor woman who had only a short time before recovered from the same disease. He had had a child die from hæmorrhage. The other children of the family had been handling it somewhat roughly and had drawn off the ligature. He had taken the precaution recommended by the first speaker of tying the ligature a second time. The matter of after douching in normal cases was, perhaps, unnecessary. He had often found that the blood serum was a normal disinfectant. As to the use of urine stimulants in the early stages, he had found quinine and wine of ipecac of decided value. He would not recommend ergot.

Dr. Oldright closed the discussion.

TORONTO PATHOLOGICAL SOCIETY.

REGULAR meeting held in the Biological Building, December 29, 1896, the president, Dr. J. Caven, in the chair. Members present, F. N. Starr, Geo. A. Carveth, H. B. Anderson, G. A. Peters, J. Fotheringham, W. Oldright, H. H. Oldright, J. J. McKenzie, R. Reeve, W. J. Wilson, J. E. Graham, A. Primrose, W. P. Caven, H. J. Hamilton, E. E. King. Visitors—Drs. H. A. Lafleur, Montreal, J. McCrae, N. Harris, and W. Pepler, and Messrs. Maybury and McGillivray.

OSTEOMYELITIS.

Specimens from a case of osteomyelitis, the head of the femur and vegetation on the valves from ulcerative endocarditis, were presented by Drs. Graham and Peters. Dr. Peters quoted Tillman's statement as to the point of origin, and expressed the opinion that while that point is the side of the epiphysis next the shaft, still it is often seen to begin under the periosteum near an epiphysis.

In this case, a single organism, the staphylococcus pyogenes aureus was found. It was also present in the blood. Typhoid infection absent. Fatal result from constitutional poisoning and endocarditis.

Pyæmic abscesses and petechial hæmorrhages were present.

Dr. J. E. Graham read the clinical history of the above case, and showed the temperature chart. Discussed by Drs. Peters, J. J. McKenzie, and J. Caven.

CYSTIC KIDNEY.

Dr. Graham presented a kidney which had undergone cystic degeneration.

History. Patient, lumberman, æt. 51 years. No previous illness except 'ague thirty-two years ago. Seven years ago met with an accident, was struck over the region of the right kidney, gave up work, had hæmaturia for some days and severe pain over the kidney for two or three weeks; went to work but never fully recovered. Dr. Graham saw the patient for the first time three years ago. He suffered from what he, the patient, termed bilious headaches.

On examination a large mass in the region of the right kidney was felt very distinctly. Malignant disease was thought most probable at that time. Arterio-sclerosis and accentuation of the second

aortic sound were marked. He suffered from palpitation on exertion.

Dr. Graham did not see him again until three months ago. He did not appear to be very ill, nor present the appearance suggestive of Bright's disease. He suffered from intense headache, bilious attacks, and dyspnoea. Urine, quantity large—sixty, seventy, and eighty ounces daily; specific gravity low; albumen present in large quantity; only a trace on his first visit three years ago.

On examination two large tumors were found in the kidney region. The right was the largest, being twelve inches in length. The left kidney was normal in size three years ago. Died suddenly of uræmic coma, after remaining in the hospital for about four weeks.

Remarks. Cases in adult life are rare. One case recorded in Guy's Hospital Reports. Patient about the same age. Had hæmaturia after injury, and died seven years after the injury. Cause of death was hæmorrhage in this case.

Origin. These cysts differ from retention cysts. None of the constituents of urine are found in some of the cavities or cysts; these are found in some and pus in others.

Impossible to consider this a retention cyst. Same general condition as cystic degeneration of the liver and spleen is sometimes present. Dr. Graham looks upon it as being due to a congenital condition, the injury acting as a stimulus to the new growth. The Woolfian bodies have been supposed by some to act a part in the etiology, but this could not account for the cystic degeneration in the liver and spleen.

Dr. Caven asked for an explanation regarding the increased secretion of urine.

Dr. Graham referred to Bradford's experiments on dogs, when large portions of both kidneys had been removed, and supposed that the increase was due to a change in the blood pressure.

Dr. Caven thinks that there must be a cystic condition at birth, and that they have grown throughout life, and cannot think that a blow of itself would cause it.

Dr. Fotheringham asks the condition of the cyst walls. Dr. Graham says they are lined with tessellated epithelium.

Dr. Lafleur referred to a case he had seen with the same symptoms, with the exception of hæmaturia. The condition was bilateral, and death resulted from uræmia. Kidneys were not as large as in this case. There was no history of injury. The remaining kidney structure was markedly fibrosed, and there were very few

glomeruli. H. B. Anderson has a specimen which shows a cystic condition, calcareous in nature.

Dr. J. Caven referred to a case of hydronephrosis recorded by Mr. Samuel Glass in the Philosophical Transactions for 1747. Patient was said to have been born dropsical, and continued to increase in size until her death at the age of twenty-three years. Before the autopsy the abdomen was found to be six feet and four inches in circumference, and the distance from the xiphoid to the os pubis was four feet and half an inch. The diaphragm was pushed upwards into the thoracic cavity. The base of the heart was under the right clavicle, and the apex on a level with the third rib on the convexity of the diaphragm. The lungs were about the size of those of a newborn babe. On tapping the large cyst which presented thirty gallons of coffee-colored, limpid fluid were withdrawn. The orifice of the ureter opened obliquely into the cavity of the sac. The left kidney and ureter were healthy.

Dr. Graham presented a Meckel's diverticulum situated four feet ten inches from the ileo-cæcal valve.

Dr. Graham then presented the lung from a case of empyema. Before death there had been some expectoration all the time, but about once in two weeks, by a severe fit of coughing, the contents of the sac were emptied. November 10 the patient was operated upon by Dr. Peters. A free opening was made and two tubes inserted. Death in twenty-four hours was preceded by very marked dyspnoea. The specimen showed a perfect opening between the pleural cavity and the bronchus.

Dr. J. Caven asked if empyema usually resulted from rupture of a tubercular cavity. Dr. Graham says he has seen some cases in which this did occur.

Dr. Reeve presented two cases of endogenous infection of the eye.

CASE 1. Patient, æt. 65. Apparently had la grippe in the beginning. Seen ten weeks after the onset of the trouble. There was slight ophthalmia of one eye; the other soon became inflamed, and patient could not see. Choroido-iritis was present. A few weeks later there was acute œdema of the retina. Eye became fixed and prominent, the anterior chamber practically *nil*. The vitreous chamber was tapped. Trouble progressed, and the eye was removed a few weeks later. Had fits; died six or seven days later.

CASE 2. Choroido-iritis with exudation into the vitreous chamber of a patient some time after confinement. The other eye

was free from disease. The diseased eye was removed. The patient is still living.

Dr. Reeve said that no micro-organisms had been found.

Dr. Caven thinks we could not assume that the condition was not due to micro-organisms simply because they were not found.

Dr. Dwyer presented :

(a) Cord from a case of locomotor ataxia of thirteen years' duration.

(b) Lungs from a case in which there was a large cavity found in the apex of the left lung. Death resulted from hæmorrhage from a large vessel.

(c) Large carcinoma involving stomach, with secondary deposits in the heart, liver, and lungs.

(d) Heart with secondary deposits from primary carcinoma of the stomach.

E. E. King presented a cyst in the liver, containing a calculus. No communication with the gall bladder. Proved to be an angioma. Meeting adjourned.

TORONTO CLINICAL SOCIETY.

THE regular meeting of the Clinical Society was held in St. George's Hall on the evening of December 10.

President Dr. Allen Baines presided.

Fellows present : Ryerson, Meyers, J. O. Orr, Davison, Bingham, Spencer, Burns, Aikins, Primrose, McDonagh, King, Oldright, Strange, N. Walker, Grasett, Pepler, Baines, Brown. Visitors : Mr. J. J. McKenzie, Drs. Wigle and H. J. Hamilton.

NEURASTHENIA.

A paper with this title was read by Dr. D. C. Meyers. He pointed out that owing to the wide prevalence of this disease much attention was being paid to the anatomical conditions which underlie it. The relation existing between intellectual effort and alteration of brain tissue was a subject which had been studied with much interest by different investigators. One of the most frequent causes of the condition was mental exertion. During mental exertion hyperæmia and changes in the cell structures were going on. This had been proved by experiments, which the essayist described. Two factors contributed to this condition : first,

a general increase of blood pressure during psychical activity ; second, the manner in which the greater veins of the pia mater enter the longitudinal sinus, since these are directed in an opposite course to that in which the blood in the sinus flows. Hence the latter would tend to retard the venous flow, and both acting together would favor the rapid production of hyperæmia. Experiment had shown that the products of cerebral metabolism being absorbed by the lymph which bathes the walls of the vessels possessed the power of causing variations in the calibre of the blood vessels. Experiments showing the change in cell structure had been carried on in bees and birds, examinations being made before and after the day's labor. The changes noted were referable to the changes in the form of the nucleus and the protoplasm. Photographs shown by the essayist showed (1) that in the unstimulated cell the nucleus stained lighter than the protoplasm ; (2) that the first effect of stimulation reduces the staining both of the nucleus and the protoplasm to one of equal intensity ; (3) that the nucleus stains steadily and distinctly darker, and that it becomes deformed and crenated.

After referring to other observations of experiments of the above sort, the essayist referred to the great strides which had been made (1) in placing mental disease on a firm anatomical basis ; (2) in allowing us justly to conclude that, since the nervous system presides either directly or indirectly over all the other functions of the body, any serious disturbance in its action could influence the functions of these organs and lead to the various disturbances met with in neurasthenia. As an example he referred to the dyspepsia common in nervous weakness. It had been said that this was crushed by the absorption of toxins from the alimentary canal. That toxins were so absorbed at a later period was more than probable, and the trouble by this means prolonged ; but he thought the primary cause was to be sought for in the changes in the cortical cells of the brain, which caused the impairment of the digestive functions ; and that it was only after these had occurred that the toxins played an important rôle. A number of the Fellows discussed this paper.

RELIEF OF EYE STRAIN FOR CURE OF EPILEPSY AND CHOREA.

Cases illustrating the cure of epilepsy and chorea by the relief of eye strain. A paper with this title was read by G. Sterling Ryerson. He said headache often arose from errors of refraction and muscular insufficiency. It was only a step further to admit that severe manifestations of nerve disorder, attended by gross lesions, might be caused by the same sources of irritation. The first case referred to was that of A.W., aged 25. Consulted the essayist on account of headache, dizziness, loss of memory, and, at times, loss of consciousness. She had been under general treatment

without benefit. Patient was found to be suffering from hyperphoria and esophoria, and considerable weakness of vision. The right superior rectus was tenotomized, and in nine or ten days the head was better and she complained of no dizziness. Complete recovery ensued. In the second case the patient was a young woman suffering from severe headache in the occiput and the nape of the neck. Pains in this region were almost invariably caused by defects of the ocular muscles, whereas frontal pain was generally due to refractive troubles. She had marked chorea. The vision was affected, and there were three and a half degrees of right hyperphoria. Partial tenotomy of the right superior rectus was done. Recovery good. He had not operated on many cases of epilepsy referred to him in which hyperphoria existed, because the degree of defect was small. Two or three examinations of such cases should be made in as many days to make sure of the average amount of defect. A constant average of two per cent. would justify operation.

Dr. Bingham proposed a query as to how the pain occurred at the angle of the scapula. His own explanation was that the sympathetic system, which was directly connected with the nerves that supply the angle of the scapula, would be affected in ocular strain.

Dr. Spencer asked if obstinate constipation was not often associated with eye defect. He remembered a case of astigmatism, which he had referred to the reader of the paper. The patient reported after treatment that he was not only cured of the trouble, but the constipation as well.

Dr. Myers pointed out some phenomena which arose through the artificial production of eye strain, muscular rigidity, unconsciousness, and attacks resembling epilepsy, showing the connection of the eye to the cuneate lobe. This case showed the importance of always examining the eyes in cases where the diagnosis was obscure.

Dr. Ryerson concurred with the remarks of the preceding speakers. He said the relief afforded to the nervous system by the removal of the source of irritation had an indirect effect on the digestive organs.

CLINICAL NOTE.

Dr. Norman Walker gave the clinical notes of a case that had come under his care during the past month. Patient had come to the office complaining of great pain in the back of the neck and headache which had existed for about a week, together with general malaise. Paralysis followed, which subsided under suitable treatment in eight or ten days. Cause of trouble was mental excitement.

Dr. Myers said certain symptoms of the case pointed to meningitis, but other symptoms excluded this, particularly the absence of fever and eye trouble, and if the disease had been due to graver lesions recovery

would not have occurred so soon. His own opinion of the case was that it was hysterical or functional paralysis. In these cases the urine is often retained. The suspicious point was the brushing of the fly off the nose when paralysis was present, that the diagnosis was borne out by the cause—mental excitement previous to the coming on of the attack.

Dr. Oldright added that another point which emphasized the neurotic nature of the attack was the fact that the patient got relief from having somebody move his arms backward and forward.

PROSTATIC HYPERTROPHY.

Mr. I. H. Cameron made some remarks on prostatic hypertrophy. He said he would not enter into a discussion of the pathology and nature of this trouble, but would rather confine himself to the matter of the treatment. He inclined to the view of Harrison, that the prostate gland was a muscular sphincter of the bladder rather than a gland, as the amount of muscular tissue was relatively much greater than that of the glandular. Under certain circumstances where hypertrophy of this structure took place, there was apt to be increase of function. Following this there was more or less retention of the urine. All were agreed that Sir Henry Thompson was right in establishing the teaching that when a man has residual urine he should have artificial relief by catheter frequently. That doctrine had held universal sway until one day a celebrated physician, now gone over to the majority, unfortunately, wrote an article on catheter fever, and set the world agog by pointing out the frequency of cystitis and distension of the urinary tract through the catheter, which, if properly used, and not abused, relieved the condition, which latterly ended in this distressing state. After Clark had written his paper there was a strong reaction on the part of the older men, who began to fear that their patients would die of surgical kidney. The speaker said no doubt many had died, and many would die of it as long as the catheter was used without antiseptic precautions. If antiseptic precautions were observed, however, surgical kidney would be avoided rather than caused by the proper use of the catheter. In advanced stages of prostatic enlargement where micturition was impossible and the intolerance of the bladder was very great, though only a small amount of urine was in it, and where it was necessary to use the catheter, a surgeon could not constantly be present; therefore there was great need of insistence that in cases of prostatic hypertrophy the proper use of a catheter would lead to cure. It was only in its misuse that dangerous results followed by infection by pyogenic organisms from without. Another method of treating the condition had found its strongest advocate in White, of Philadelphia, and was that by orchidectomy. In one hundred and eleven cases in which operation had been done, there had been twenty

MEETINGS OF MEDICAL SOCIETIES.

deaths. The average age of the cases in which recovery took place was sixty-six and a half years; the average of fatal cases, 75. So age seems to have some influence in determining the mortality—something that would be expected because of the probable presence of arterio-sclerosis and less recuperative power of the tissues the older the men were. Of the twenty fatal cases, White, for one reason and another thought that thirteen might be excluded, as the precedent condition of the patient was such as to prevent success in the operation. This seems to be a fair showing. On the other hand, Falls, of Glasgow, had had six cases with five deaths as a result of operation, the remaining one not being benefited in thirty days. The speaker himself would refer but to four of the cases which had come under his observation as being typical examples of classes of cases in which this operation was applicable. The first case was that of a man sixty-nine or seventy, who came under his care in the hospital suffering from retention of urine and with cystitis. Prostatic enlargement was noted, and it was determined to do orchidectomy to relieve him. Due care was not taken to ascertain the condition of the kidneys before operation. At this time catheter drew urine at ten inches. Operation presented no difficulty. Patient was returned to bed. Never very well afterwards, but urine was drawn by catheter at nine inches. Autopsy showed he had surgical kidney on both sides. He should not have been operated upon, the speaker held.

The second case was that of a man sixty-four or five where this condition was present. Unilateral orchidectomy was done. So far as voluntary micturition was concerned, this had no effect whatever. He came in a year or two later for an aggravated cystitis. Sounding him, a stone was discovered. Lithotomy was done and bladder drained. Good recovery. Returned in two years. Another stone found. Nucleus was a hair, likely carried in by catheter. Later, the patient returned again. Bladder was drained, and recovery followed. Patient returned still again, suffering from cystitis. The other gland was removed. During convalescence, patient became extremely depressed and melancholy. Was given the fresh testicle of sheep. Mental trouble disappeared. The function of voluntary micturition was not restored. It was not expected, as for two years the function had been in abeyance.

The third case was that of a man eighty-one or eighty-three, upon whom the speaker had operated last May. The patient had suffered for some time from febrile disturbance incident to prolonged cystitis. An operation was followed by prompt and decided improvement. He presented rather active delirium during convalescence, but this passed off.

The fourth case was that of a man aged sixty-seven, suffering from acute retention of urine, which had existed about six weeks. Operation

was done; within three or four days he was able to pass urine. Recovery complete.

Dr. Grasett said he leaned to conservatism in the treatment of this condition. Thus far he had been able to treat these cases without resorting to the method advised by White. He thought surgeons were not sufficiently careful in regard to the cleanliness of urethral instruments. Where the catheter was kept clean its use could be maintained a long time. A patient, under observation, æt. 83, had used one twelve years—a man in active life. He had had most beneficial results from drainage also. Cases treated in this way were referred to.

Dr. E. E. King thought that the operation of orchidectomy would never become the operation of choice in enlarged prostate, but in those where great urgency was necessary. A case of this latter sort on which he had operated showed marked improvement within eighteen hours. A second case, in which he had done vasectomy, was not much benefited by the operation. A third case, in which orchidectomy was done, died of pneumonia subsequent to the operation. In six other cases results were so good that the speaker was very well satisfied with the operation.

Dr. G. A. Bingham concurred with the views expressed by the leader of the discussion as to the treatment of long-standing and obstinate cases of prostatic enlargement. In the earlier stages he had found the method of stripping the prostate and the vesicles of decided value. This relieved the glandular congestion and enlargement. The speaker cited cases in which he had noted distinct benefit from this course of treatment. Before resorting to removal of the testicles he would examine the bladder by suprapubic cystotomy. In this way drainage could be performed, the condition of the walls of the bladder ascertained, the diagnosis established, and, if necessary, remove a portion of the middle lobe.

Mr. Cameron closed the discussion.

The regular meeting of the society was held in St. George's Hall, Wednesday evening, January 13th, 1897, President Dr. Allen Baines in the chair. Fellows present: Temple, J. A., Strange, Ryerson, Aikins, Pepler, Fotheringham, Anderson, Strathy, Baines, Brown, Graham, Spencer, King, McDonagh, Burns, Primrose, Grasett, Wright.

Dr. W. H. Pepler was appointed treasurer *pro tem.* in the absence of Dr. Walker, who has removed from the city.

Dr. A. Primrose read the history of a case of

LACERATED PERINEAL WOUND,

with death from sepsis.

The patient was a little girl aged twelve, admitted under his care

into the Children's Hospital, October 25, for a lacerated wound of the perinæum. Six days before she had fallen astride of a picket fence. The external sphincter was torn, and the wound extended forward to the right labium, which was very much swollen. The child was in great pain. The temperature was 100° . The next day when he saw her the temperature was 101° , and the pulse 100. Pain only upon examination. The next day the patient was operated upon, being the eighth day since the wound. The wound did not penetrate deeply. It had split the anterior wall of the rectum, extending to some depth into the perinæum and through the vaginal wall. The abscess was opened in front. Pure cultures of the streptococcus were found. Iodoform gauze was passed up into the wound and boracic acid poultices applied. Next day the pulse was 96 and the temperature 100° . The swelling subsided. Two days after the operation the patient complained of pain in the abdomen. Evening temperature 100.2° . Was somewhat restless; next day temperature 102° , pulse 138. Evening temperature normal, pulse 120. Wound was dressed and a dose of calomel was administered. Child vomited some yellow fluid. The urine passed involuntarily. Pain in abdomen increased; morphia administered. Great thirst. Temperature fell to subnormal. The abdomen was not much distended, but was tender on palpation. 10 c.c. of antistreptococcic serum were administered. Vomiting persistent. Subsequently three other doses were given. After these doses the child seemed to rally from the almost collapsed state she was in. Salines per rectum and hypodermically over the chest were given. Rectal enemata were also given during the later stages of the case. For the last two days no serum was obtainable. Death ensued.

Post-mortem. There was a gaping wound in the right labium two inches long. The perinæum was practically absent. There was greenish-yellow pus in the peritoneal cavity. Pus was also found on the dorsal aspect of the sternum. There was a clot in the right ventricle. The heart-muscle was pale and mottled. There were old pleuritic adhesions. There was a tubercular nodule in the right apex. The glands at the root of the lung were enlarged. The stomach was adherent to the liver. The spleen was pale and granular. The right lobe of the liver extended to the iliac crest. Section showed the liver pale and fatty. Looking into the bladder, which was normal, the end of the urethra was found to be gangrenous. The rectum was dark and gangrenous one inch from the anus. The intestines were distended with gas. No communication could be found between the perinæum and the peritoneum.

The doctor adverted to some of the more interesting points in connection with the case. He thought the serum did some good in prolonging life. In looking into the sparse literature of the subject he had found one case of an acute septic peritonitis and metritis successfully treated with the serum.

Mr. J. J. Mackenzie was invited to discuss the question. He said :

The case was one of great interest to me, as it was the first opportunity I had had of administering the antistreptococcic serum. The first work in connection with this kind of serum was done in the Pasteur Institute by Marmorek. The results were published, and a short account of some cases of erysipelas in which it was used. There was little in the clinical notes that would allow one to judge of the value of the serum. The serum was got by inoculating horses with a virulent culture. The horses would take larger and larger doses until 200 c.c. were reached. It looked as if a condition of immunity had been established in the horse. Marmorek's work was not confirmed by Petrowsky, of Berlin. The work in connection with the antistreptococci serum presents this difficulty. Bacteriologists have confused the various forms of poisons secreted by micro-organisms, and have spoken of the toxines as substances very similar to one another. They have extended the results obtained in diphtheria and tetanus to other diseases. As a matter of fact, there are two sorts of poisons produced by these organisms. First, a soluble poison, similar to the toxine of diphtheria, excreted by the germs. But, in addition to these, there is a poison associated with the bodies of the germs which is eliminated at their deaths.

This latter toxine has an intense nephritic action upon the cells. In diphtheria this is of little importance, because the germs are thrown off very rapidly, and the poison will not pass into the system. In streptococcic and staphylococcic cases the germs are practically in closed cavities, and instead of being thrown off are continually absorbed. We might get an antistreptococcic serum which would counteract the soluble toxines, and be of service in the case if administered early, but it would not have any effect on the latter named poisons.

In the successful case referred to by the reader of the paper he was doubtful if the serum had any effect.

There would be a greater difference in the character of the antistreptococcic serum than there would be in the diphtheritic serum, as the streptococcus varies so tremendously in its virulence. So to get an active serum it would be necessary to get an exceedingly active culture. Marmorek's serum was so virulent that he claimed a single organism introduced into a rabbit would kill it in seventeen hours.

(To be continued.)

Medical Items.

LOOK at the address label and see if your subscription has been properly credited. *All subscriptions received by 13th of month will be credited on the label of that issue.*

DR. NORMAN WALKER has removed from Toronto to Niagara Falls.

DR. OSLER, of Baltimore, spent a few days of Christmas week in Toronto.

DR. RUTHERFORD, Listowel, has returned from a three months' course at Johns Hopkins, Baltimore.

DR. HAY, of Elmira, was in the city on a flying visit to see his brother-in-law, who is dangerously ill.

DR. G. H. CLEMENS, Port Perry, leaves shortly for an extended trip to England and Germany. He will be gone about a year.

DR. LAFLEUR, of Montreal, was the guest of Dr. J. E. Graham, of Toronto, for a few days during Christmas week.

DR. GRAHAM invited a number of local physicians to meet Drs. Osler and Lafleur on Monday evening, December 30, at his residence on Bloor street. A most enjoyable evening was spent.

DR. A. E. AWDE (Tor. '92) has removed to Philadelphia, where, we understand, he will hold a position in one of the large hospitals. He has resigned his position as a member of the Public School Board of Toronto.

DR. JAMES F. ROSS, of Toronto, made a flying visit to Buffalo, Philadelphia, and Baltimore during Christmas week. His main object was to meet certain members of the Council of the American Association of Obstetricians and Gynæcologists, of which he is the president, and complete, as far as possible, arrangements for the next meeting of the association, which will be held at the Cataract House, Niagara Falls, N.Y., Tuesday, Wednesday, Thursday, and Friday, August 17 to 20, 1897.

OBITUARY.

WILLIAM GRANT, M.D., C.M.—Dr. William Grant, of Perth, died suddenly at his home, January 17th. Heart disease is said to have been the cause. He received his medical education at McGill University, and graduated in 1867. Shortly after he commenced practice in Perth. He was successful as a physician, and for many years took an active part in municipal matters.

WILLIAM JOHN GLASSFORD, M.D., C.M.—Dr. W. J. Glassford died at his home in Scotland, Ontario, December 2, aged thirty-six. He was born in Vaughan, and was educated in the Toronto School of Medicine. He received his degree from the University of Victoria College in 1887, and shortly afterwards commenced practice in Scotland, a village in the County of Brant. As a student and as a practitioner he was highly successful, and very popular with his friends and associates. He was quiet and kindly in manner, but also active and energetic in his work. He died of pneumonia, after a very brief illness. He left a widow and one child. His mother, widow of the late Rev. P. Glassford, of Vaughan township, resides in Toronto.

Book Reviews.

A TREATISE ON OBSTETRICS. For Students and Practitioners. By Edward P. Davis, A.M., M.D., Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic; Clinical Professor of Obstetrics in the Jefferson Medical College, of Philadelphia. In one octavo volume of about 600 pages, with 217 engravings and 30 full-page plates in colors and monochrome. Cloth, \$5; leather, \$6.

This work, which is one of the most recent on obstetrics, is very well gotten up.

The work is divided into seven sections. Section I. deals with pregnancy and labor; II., with pathology of labor; III., with obstetrical operations; IV., with abortion and the puerperal state; V., with infancy in health and disease; VI., with diseases of infancy; VII., with the jurisprudence of obstetrics.

We think the author has very wisely omitted the usual chapter on anatomical description of the female genital organs, which occupies many pages in most text-books. He only touches on anatomical description just in so far as it will elucidate the study of the art of obstetrics.

Under the subject of obstetric diagnosis reference is made to the recent work with "X" rays, and a couple of skiagraphs are given by way of illustration. On page 53 are statements concerning the action of the "X" rays on cells and bacteria which we think are not yet proven to be true. In fact, there are some cases on record which show that at least a dermatitis with more or less pain may be produced by the action of these rays. (See CANADIAN PRACTITIONER, November, 1896.)

There are many plates to accompany the text, some of which are extremely good, and others are rather poor. We think the illustrations on pages 318-325 are hardly up to the mark. In all other respects, however, the book is well worth perusal and study, and will hold its own with all the best and most recent treatises on obstetrics.

THE INTERNATIONAL MEDICAL ANNUAL, 1897. A complete work of reference for medical practitioners. The conjoint authorship of forty-one distinguished American, British, and continental authorities. Price \$2.75. Fifteenth year. 8vo. morocco cloth, about 700 pages. Illustrated. E. B. Treat: 5 Cooper Union, New York.

This very welcome annual will shortly be ready for distribution. We always look forward to the "International Annual." The review of the past year's work is always thorough and complete. About forty of the most prominent men of international reputation contribute to the success of this work. The articles are concise, yet complete.

THE CANADIAN PRACTITIONER

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Original Communications.

THE PHRENOLOGY OF GALL AND FLECHSIG'S DOCTRINE OF ASSOCIATION CENTRES IN THE CEREBRUM.*

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IN the history of medicine the eighteenth century stands out prominently as a period in which flourished a whole host of so-called medical systems and theories. The *animismus* of Stahl and the nerve-ether theory of Hoffmann had been displaced by the system of Boerhaave ; the last, in turn, being gradually supplanted by the doctrine of irritability advanced by Albrecht von Haller, who had formulated a new theory based upon his experiments in physiology. William Cullen, again, combining Hoffmann's system with the doctrine of irritability of Haller, sought the cause for all pathological

*Remarks made before the Clinical Society of Maryland, November 20, 1896.

processes in the nervous system. Each individual attempted to subordinate the most varied phenomena met with in disease to his own particular principle, and as yet the newer studies in anatomy and physiology were not wide-reaching enough in their influence to prevent the development of the most diverse and contradictory medical theories. The "excitation theory" introduced by John Brown met with an enthusiastic reception, not only in England, but also on the Continent, although it was gradually undermined by the vigorous opposition of Stieglitz and of Hufeland. It was only toward the end of the eighteenth century and the beginning of the nineteenth that the investigations in the field of natural science began to affect medical ideas to any very considerable degree. The natural philosophy of Schelling, which was accepted widely by physicians, especially in Germany, benefited medicine very little, if at all. Indeed, the statement has been made that the general tendency of the time to favor Schelling's philosophy did more than anything else, except the curiosity of the public, to spread the three false doctrines: animal magnetism, phrenology, and homœopathy. Animal magnetism, fathered by the shrewd Anton Mesmer, had a brilliant career until the French commission, with Franklin at its head, successfully demolished it. Homœopathy, founded by Christian Friedr. Samuel Hahnemann, which attempted to subordinate the whole of the healing art to an arbitrary dictum, *Similia similibus curantur*, still has many adherents, especially in America. Phrenology, or cranioscopy, connected closely with the name of Franz Josef Gall, has now but few disciples, and an avowal of belief in phrenological doctrines is usually received, even by the layman, with a suppressed smile.

Gall was born at Tiefenbrunn, in Germany, in 1758. The history of his life affords entertaining reading. He studied medicine in Strassburg and Vienna, and practised his profession in the latter city, where he became very well known. He tells us in his books how, at a very early age, he noticed among his playmates the existence of definite relations between the external appearance of the head and face and certain mental characteristics. His lectures delivered in Vienna, in which his phrenological doctrines were chiefly set forth, were very popular and largely attended until 1802, when, at the instance of the ecclesiastical authorities, he was commanded by the Austrian government to discontinue his public teaching. On leaving Vienna he went to Paris, where he gathered around him many supporters and continued to lecture, investigate, and publish. He died at Montrouge, near Paris, in 1828.

Fig. 1.

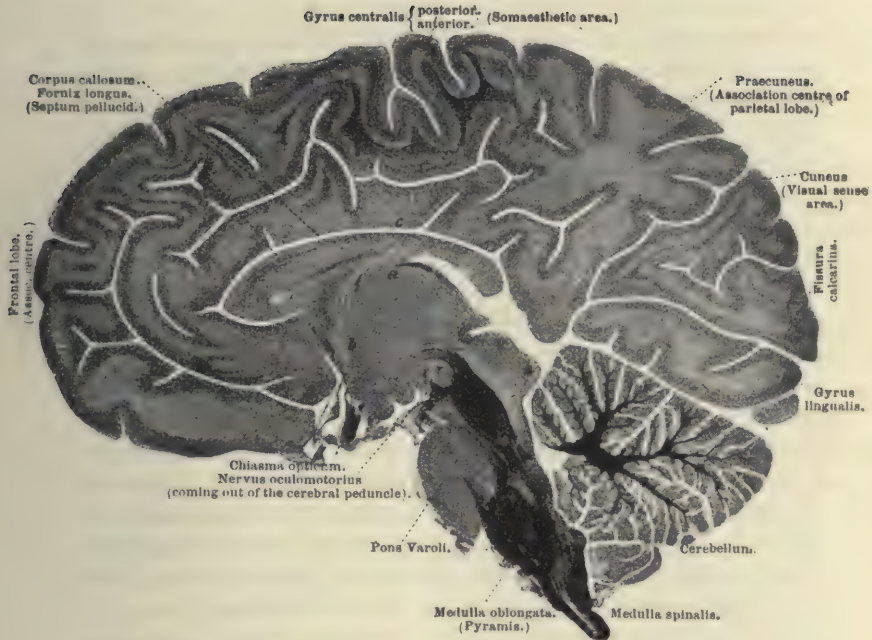


FIG. 1. Sagg'tal section through brain of a child one month old stained by the Weigert-Pal method. (After Flechsig.)

- a. Tænia thalami optici (reflex path for the transference of olfactory impressions to the centres governing the movements of the head).
- b. White matter of septum pellucidum (in part running between the olfactory area and the gyrus hippocampi).
- c. Corpus callosum corresponding to the somæsthetic area.
- d. Superior } colliculus of corpore quadrigemina, cut near the middle line; here very few medullated fibres are present; sections lateral to this show many.
- e. Inferior }
- f. Red nucleus of the tegmentum: below this is seen the decussatio brachii conjunctivi.

[In this and succeeding plates I have translated Flechsig's terms as far as possible into the nomenclature of the Anatomical Society. For his sense centres and association-centres English terms which seemed most suitable have been employed. For the suggestion of the name "somæsthetic area" as a translation of the German *Körperfuhsphäre* I am indebted to Prof. B. L. G ldersleeve.—L.F.B.]

THE HISTORY OF THE

REIGN OF



OF

It has been thought by many that Gall's statement concerning his early observations of his schoolfellows was made late in his life with the object of bolstering up his claims to originality. Macallister, in his excellent and comprehensive article on phrenology in the "Encyclopædia Britannica," points out that Prochaska, of Vienna, who had published a work on the nervous system in 1784, is really to be looked upon as the father of phrenology, inasmuch as in his volume are to be found the germs of the views propounded by Gall in the same city a few years later. Prochaska, in turn, was preceded, at any rate as far as the idea of connecting the anatomical diversities of the brain with intellectual peculiarities is concerned, by Metzger, who, twenty years before, had proposed the inauguration of a series of observations bearing upon this point. Moreover, the doctrines of localization of function in the brain are of still older date, though it must be admitted that very little positive knowledge upon this point existed before the beginning of the nineteenth century.

After leaving Vienna Gall attached to himself Spurzheim, who seems to have been for some time an enthusiastic pupil, and along with his preceptor to have made many investigations upon the structure of the brain and the shape of the skull. Spurzheim rendered great service to the phrenological doctrines in England and America, where he lectured to large audiences and attracted many pupils, the most important one in America being, perhaps, George Combe. Gall and Spurzheim did not, however, remain throughout life in harmony. They separated in 1813, in the subsequent years each preaching his own doctrine and disparaging to a certain extent, at least, the philosophical views of the other.

The doctrines of the phrenologists may be briefly summed up as follows: They believed that the brain, as a whole, is the organ of the mind, and that it is made up of multiple organs, each mental capacity displayed by an individual depending upon the development of its corresponding organ in the brain. The form of the skull was thought to depend upon its relations to the brain within it, though Gall, in one of his publications, vigorously opposes the appellation "cranioscopy" as descriptive of his doctrines, stating that he had always maintained that his work was directed toward the anatomy and physiology of the brain, the contributions concerning the relations of the form of the skull to the morphology of the brain being merely an appendage of the bulk of his studies.

It is not my purpose, in this brief communication, to describe the whole list of faculties and the portion of the brain assigned to

each by Gall, Spurzheim, and others ; phrenological diagrams are familiar to all of us, and, moreover, an account of the views of the various adherents and modifiers of the system is to be found in almost any encyclopædia. A glance at the loose manner in which some of the so-called organs of the mind were localized in the brain by bumps upon the skull will suffice to show the unscientific nature of the whole system. Whereas Gall believed that there were only some twenty-six or twenty-seven organs of the brain, with some of his followers the number was increased considerably, Fowler, for example, describing as many as forty-three different faculties. Spurzheim divided the different capacities of the human mind into (1) the *feelings*, including the propensities and sentiments, and (2) the *intellectual faculties*, including the perceptive and reflective activities. As examples of the propensities may be mentioned concentrativeness, amativeness, philoprogenitiveness, combativeness, and acquisitiveness ; of the lower sentiments self-esteem, vanity, and cautiousness may be mentioned ; and of the *higher sentiments* benevolence, veneration, and firmness. Among the *perceptive faculties* he included the appreciation of form, size, weight, color, locality, number, order, time, and language ; while the power to study causality and the ability to compare one thing with another were described as *reflective faculties*. Having gained an idea as to the localization of a certain faculty, Gall and his friends would examine the heads of their acquaintances, and the casts of the skulls of persons who had possessed the particular mental characteristic under examination, and would seek for a distinctive feature corresponding to this particular trait. The following examples are excerpted from Macallister's article. *Amativeness* was located by Gall in the lower part of the posterior surface of the head because he found this area to be hot in a hysterical widow. He referred the faculty to the underlying cerebellum. It is amusing to learn that the adherents of phrenology explained the presence of a rudimentary cerebellum in the girl Labrosse, who had during life exhibited very marked amative tendencies, by assuming its obliteration from over-use. *Destructiveness* was located above the external auditory meatus, inasmuch as this is the widest part of the skulls in carnivorous animals. A marked prominence has been found in this situation on the head of a student, "so fond of torturing animals that he afterwards became a surgeon," and it was also well developed in the head of an apothecary who subsequently became an executioner. *Acquisitiveness*, located upon the upper edge of the anterior half of the squamous suture, was attributed to this region because

Fig. 2.

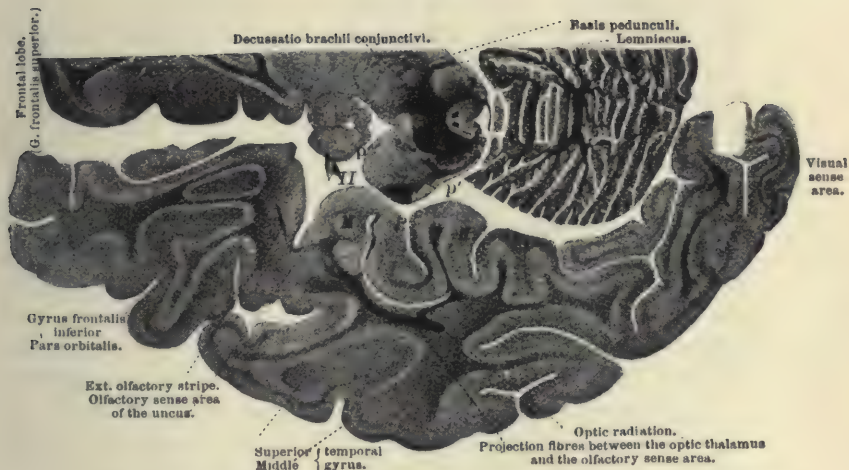


FIG. 2. Horizontal section through the brain of a child aged 3 months. (After Flechsig.)

II. Tractus opticus.

H. Association system (cross-section) in the g. hippocampi, connecting the olfactory cortex of the uncus with Ammon's horn, going over into the alveus.

M. Nucleus amygdalæ.

P. Pyramidal tract in cross-section.

ψ. Temporal cerebro-pontal path.

φ. Frontal cerebro-pontal path.

The decussation of the nervous trochlearis is shown. The projection fibres of the olfactory sense area and of the g. hippocampi are completely medullated. At the tip of the frontal lobe and at the junction of the superior and middle temporal gyri myelin is as yet entirely absent. In many other parts (darker in tint), corresponding to the advanced age, association fibres are already medullated.

Gall had noticed it to be prominent among the pickpockets of his acquaintance. The bump of *constructiveness* was easily found, since it was large on the head of a milliner of very good taste, and upon a skull said to have been that of Raphael. *Self-esteem* was located over the obelion, because Gall found this region prominent in a beggar who had excused his poverty on account of his pride. The *love of approbation* was supposed to be situated outside the obelion, inasmuch as this part of the head was especially protuberant in a lunatic who thought herself the queen of France. *Cautiousness* was assigned its proper situation from the observation of the large size of the parietal eminences in an ecclesiastic of hesitating disposition. *Veneration*, located in the middle line at the bregma, was determined by Gall after visiting churches, where he found that those who prayed with the greatest fervor had distinct prominences in this region. The bump of *ideality* was found especially developed in the busts of poets, and was said to be the part touched by the hand when composing poetry. Since the frontal eminence was prominent in Rabelais and Swift, it was believed to be the organ of the sense of the ludicrous. The capacity for recognizing faces was supposed to depend upon the width of the interval between the eyes, inasmuch as Gall found in a squinting girl a good memory for faces. The murderer Thurtell, who had a large organ of benevolence, is said by devotees to phrenology to have been in reality generous, since it was discovered that he once gave half a guinea to a friend. Many other laughable instances might be given of these crude methods of localization, and of the futile attempts of the adherents of the doctrine to bolster up their tumbling edifices.

It is easy to understand how a shrewd man like Gall—and anyone who reads his books will be very ready to grant his shrewdness and intelligence—developing with great rapidity a system full of interest for the public, and stimulating their curiosity by providing them with an infallible clue to the determination of character and fitness for occupation in life, should have attained widespread and lucrative popularity. He soon made large amounts of money, lived in state, and numbered among his personal friends some of the first names in France. Nor was he a charlatan pure and simple; he undoubtedly had a brilliant mind, and made elaborate and careful studies of the brain and skull, which resulted in discoveries of permanent value concerning the anatomy and physiology of the brain. No better proof of this statement can be obtained than by perusing the volumes which I place before you, kindly loaned by the provost of the Peabody Library. This atlas, with its well-executed copper

plates, in particular shows the care with which much of his work must have been done. The edition, including the atlas, sold in Paris at 1,000 francs.

It is curious how nearly a man starting with also premises may often approach to actual conditions. The newer investigations bearing upon the architecture of the brain have thrown much unexpected light upon the origin of the phenomena of the mind; the significance of the brain for the psychic phenomena has been established upon the basis of exact scientific investigations, and we are now justified, perhaps, in speaking in a certain sense of a "new phrenology." It may be interesting to refer briefly to the series of investigations which have led up to our present knowledge upon this subject.

In so far as his doctrine maintained that the convolutions represented the most important substratum of the mental activity, and that the single convolutions of the cerebral cortex are not of equal significance for intellectual life, Gall most certainly approached the modern theory of cerebral localization. The investigations of Flourens led him to very different conclusions, and in 1842 he published his well-known "*Examen de la Phrenologie*," which was thought to have demolished the phrenological doctrines. It was Flourens' idea that every portion of the substance of the cerebral cortex had precisely the same significance. He believed that the removal of any given mass of the gray matter affected all the mental functions in exactly the same way, so that visual or olfactory perceptions would not be diminished in different proportions, no matter what area was extirpated. The facts which have been discovered by pathologists and clinicians concerning aphasia were, however, in entire opposition to these ideas of Flourens. Gall and Bouillaud had recognized that circumscribed lesions in the cerebrum, especially in the frontal region, could give rise to definite disturbances in speech. Later, Marc Dax pointed out that aphasia occurred practically only when the left half of the cerebrum was diseased, and in 1863 Broca established the fact that, in right-handed people, the third left frontal convolution is the portion of the gray matter of the cerebral cortex which is important for articular speech. Subsequent studies upon aphasia have shown that there are several different kinds of the affection, only one variety of which depends upon disease of Broca's convolution, *i.e.*, the one in which the capacity to speak out the word which the individual has in his consciousness is lost; the inability to understand spoken words, and the incapacity to call into consciousness the names of objects which are visible to the

Fig 3

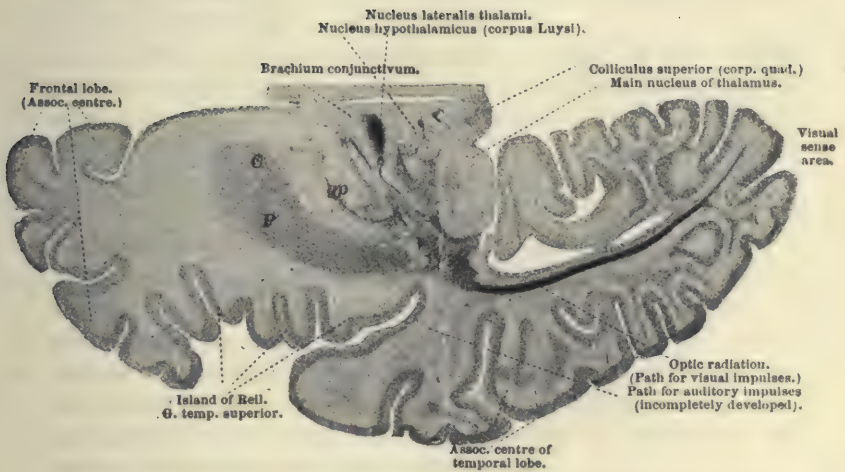


FIG. 3. Horizontal section from the brain of a child a little over a week old. (After Flechsig.)

C. Nucleus caudatus.

P. Putamen of the nucleus lenticularis.

Gp. Globus pallidus of the nucleus lenticularis.

The optic radiation is well medullated; the auditory path is not yet medullated as far as the cortex.

individual, being associated with disease of other parts. These facts alone prove that different regions of the brain are of different significance for the intellectual functions.

In addition to the studies on aphasia, there have been recorded a whole series of pathological lesions which clinically were associated with definite disturbances of sensation ; thus, lesions of the occipital cortex have a tendency to affect visual sensations ; lesions of certain portions of the temporal cortex interfere with hearing ; the sense of smell has been shown to be connected with the under surface of the cerebrum, and the sense of touch with the upper frontal and anterior parietal regions. Physiologists, by means of experiments upon animals, have added most satisfactory support to these clinical and pathological observations.

In 1870 Fritsch and Hitzig reported the results of their investigations concerning galvanic excitation of the surface of the brain of animals, in which it was shown that stimulation of definite regions calls forth movements of certain only of the parts of the body. Three years later Ferrier used faradic stimulation of the cortex, and was able to elicit quite complicated movements of different parts of the body, movements which seemed to be purposeful, inasmuch as they correspond to those employed by the animal when utilizing its sense organs, that is to say, movements such as are employed in listening, touching, looking at, or smelling external objects. Munk proved, further, that by the removal of certain convolutions it was possible to produce in animals disturbances of sensory activity quite analogous to those which had been observed in the clinical and pathological study of diseased human beings.

The studies of Goltz upon dogs supply an exceedingly interesting link in the chain of experimentation. This investigator demonstrated the possibility of keeping a dog alive for a considerable length of time in the entire absence of a cerebral cortex, and in this way was able to ascertain what faculties the animal possesses when only the lower parts of the brain are functioning uncontrolled by the cerebrum. He found that an animal without a cerebrum still possesses a very complex nerve life, a fact which is not so very surprising when one recollects the observations of comparative anatomy. While the dog of Goltz' experiment appeared to be devoid of memory and judgment, and incapable of finding out for himself, among the objects outside of the body, those necessary for the satisfaction of his needs, he showed himself to be by no means an involuntary machine. Goltz states that he could stand upright, could run, could be set in motion by external stimuli of various kinds ;

that he could show evidences of emotion, becoming angry, and biting and howling under provocation. When hungry the whole body entered into lively motion, and after food had been taken the animal again became restful, and showed evident signs of satisfaction. As Flechsig points out, these experiments do not permit any conclusion regarding the condition of consciousness after the loss of the cerebrum, but they do show distinctly the power and the independence of the bodily instincts, and teach us that no small part of the acts concerned in these can be set free simply through bodily influences, entirely independent of the higher mental faculties.

The studies of His and Flechsig, which have done so much in recent years to give us an insight into the finer organization of the nervous system, have been especially devoted to the development of the nervous system. It is the work of Flechsig to which I wish on this occasion to especially direct your attention.* His method of outlining tracts by the observation of successive periods of myelination is not new. His larger work, published many years ago, and entitled "*Die Leitungsbahnen im Gehirn und Rückenmark*," is based almost entirely upon studies made after this fashion. The tracts which function first receive their myelin sheaths before the others, and a tolerably definite idea of the physiological capacities of a developing animal at a given moment, up to a certain period at least, can be gained by ascertaining the number of tracts which have already been medullated. Thus the spinal cord, medulla, pons, and corpora quadrigemina are almost entirely medullated at a time when the parts higher up show very little or no myelin. Even in the newborn child Flechsig has shown that the cerebrum is almost entirely unripe, inasmuch as extremely few of the myriads of nerve fibres which it contains are at this period medullated. Man, therefore, at the beginning of his earthly experience, resembles very closely the dog of Goltz' experiments; he is practically a being without a cerebrum, and yet, as in Goltz' dog, even with the drawing of the first breath, the bodily instincts in the child demand satisfaction. The newborn infant, with satisfied impulses and unaffected by external stimuli of a disagreeable nature, shows no evidence

* I have thought it best at this time to present, in as clear and brief a manner as possible, and without discussion, the main tenets of Flechsig with regard to the structure and function of the brain. While in such a short communication it is impossible to do justice to so broad a subject, it is to be hoped that it may be possible to show at least the trend of his views. The anatomical basis for his studies is given at some length in the voluminous notes appended to his "*Gehirn und Seele*" (Leipzig, Veit. Co., 1896). An idea of some of the criticisms which may be made of his doctrines can be gained by a perusal of the discussion of the address delivered by Flechsig at the Psychological Congress in Munich, summer, 1896 (cf. *Centralbl. f. Nervenheilkunde und Psychiatrie*, October, 1896).

Fig. 4.

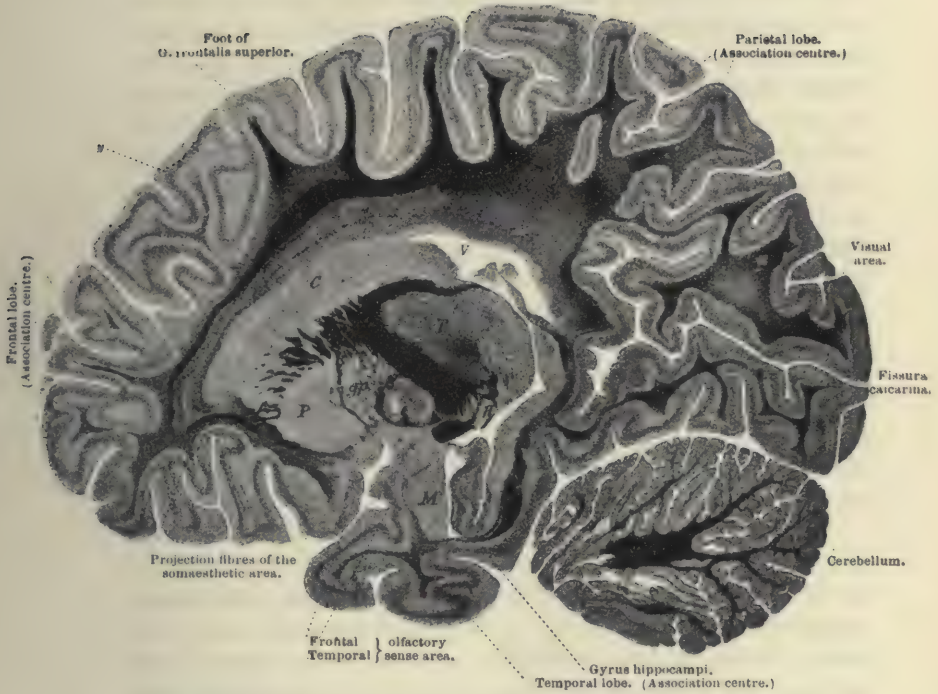


FIG. 4. Sagittal section through the brain of a child said to have died in the fifth month of life. (The child was probably some months older.) (After *Flechsig*).

All parts of the white substance medullated, only in places still mixed with non-medullated fibres.

C.P. *gl.* as in Fig. 3.

T. Thalamus (lateral nucleus).

II. External geniculate body.

X. Substantia innominata *Reil* (gray substance between the n. lenticularis and the n. amygdalæ.)

M. Nucleus amygdalæ.

x-y. Projection fibres of the anterior upper and inner part of the somæsthetic area (*Körperfühlsphäre*): these run from the internal capsule (between *P* and *C*) forwards and bend around at an acute angle at *x* to pass upwards and inwards.

V. Lateral ventricle.

of consciousness. If it become hungry or be exposed to cold, or if painful stimuli be applied to it, active movements of the body result.

Flechsig has shown in his study of the embryonal cerebrum, that it is the sensory paths which first become medullated. Gradually the individual fibres of one sensory path after another, beginning with that concerned in the sense of smell and ending with that by which are carried auditory impulses, passing from the sense organs of the body toward the cerebral cortex, gain their myelin sheaths. Each sensory path includes a very large number of nerve fibres, containing the axones of neurones whose cell bodies are situated lower down. Following the different sensory paths to their cortical termination, it is easy to show in these early stages, in which very little of the brain is medullated, that the individual sensory paths terminate in tolerably sharply circumscribed cortical regions, for the most part widely removed from one another, being separated by masses of cortical substance which remain for a considerable period entirely unripe. Indeed, the cortical terminations of the individual sense paths correspond entirely to those regions of the surface of the brain which pathological observation has shown to stand in relation to the different qualities of sensation. It is the destruction of these internal sense organs which results in cortical blindness, cortical deafness, etc.

After these sensory paths in the child's brain have become medullated, new paths begin to develop from the points where the sense fibres terminate—paths which go in the opposite direction. These fibres, as they become medullated, can be traced passing downwards to the medulla and the spinal cord to the nuclei of origin of the motor nerves, and connecting in this way the sensory regions on the surface of the cerebrum with the motor apparatus. The area of the cortex concerned in the sense of touch has an especially well-developed bundle of these motor fibres, the *fasciculus cerebro-spinalis* or so-called pyramidal tract, which consists of more than 100,000 fibres on each side, an arrangement which permits the carrying out of very delicate movements, especially of the parts of the body concerned in the sense of touch. Connections between the cortical sensory areas and the lower centres which appear to be concerned more directly with the bodily instincts have already been made out. It is clear, therefore, that bodily instincts and external sense impressions may reciprocally influence one another. According to Flechsig, the sense of smell is most intimately connected, the sense of hearing least associated with the centres

concerned in the exercise of the lower instincts, a fact which, if confirmed, might account for the more ideal character of auditory impressions.

In the diagram before you the localization of these various sense areas in the brain, according to the newest investigations of Flechsig, has been pictured. It will be seen that they are very sharply circumscribed, although at the peripheries of the areas the fibres do not terminate so close together as in the central parts. The large region, the somæsthetic area, occupying the whole domain between the fossa sylvii up to the corpus callosum, including the gyri centrales and the feet of the frontal convolutions, together with the lobulus paracentralis and the middle third of the gyrus fornicatus, represents the cortical field, in which terminate on either side those of the 200,000 fibres of the medial lemniscus, which do not stop at the basal ganglia. These fibres, together with those relaid in the thalamus, it is believed, carry to the cortex the impulses which are concerned in the projection into consciousness of sensations of touch, pain, temperature, muscle and tendon sense, thirst, hunger, and equilibrium, as well as sexual sensations, that is to say, the sensations which tell us of the condition of our bodies rather than that of external objects. It is obvious that this area must represent a complex mass of sense centres rather than a single sensory area; indeed, we already have evidence from the pathological side indicating very different functions to the several parts of the somæsthetic area, although the localization here, as might be expected, concerns that of groups of elementary rather than that of single sensations. This is the area in which the body in its whole extent can be reflected in consciousness. It is possible that a similar mirroring of somatic sensations occurs in the cerebellar cortex.

Besides being a sensory field, the somæsthetic area is also the great motor region whence nearly all the movements serving for the voluntary satisfaction of the bodily instincts appear to start. When a man voluntarily swallows, chews, breathes, or seizes an external object, it is this area which is active.

The nerve fibres conducting the impulses concerned in olfactory sensations terminate, according to Flechsig, mainly in the gyrus uncinatus, where it touches the island of Reil, although many of them end in the frontal lobe.

The fibres concerned in visual sensation, passing from the lateral geniculate body, the thalamus and the superior colliculus of the corpora quadrigemina, follow a direct course to terminate in the immediate neighborhood of the calcarine fissure, although sub-

Fig. 5.

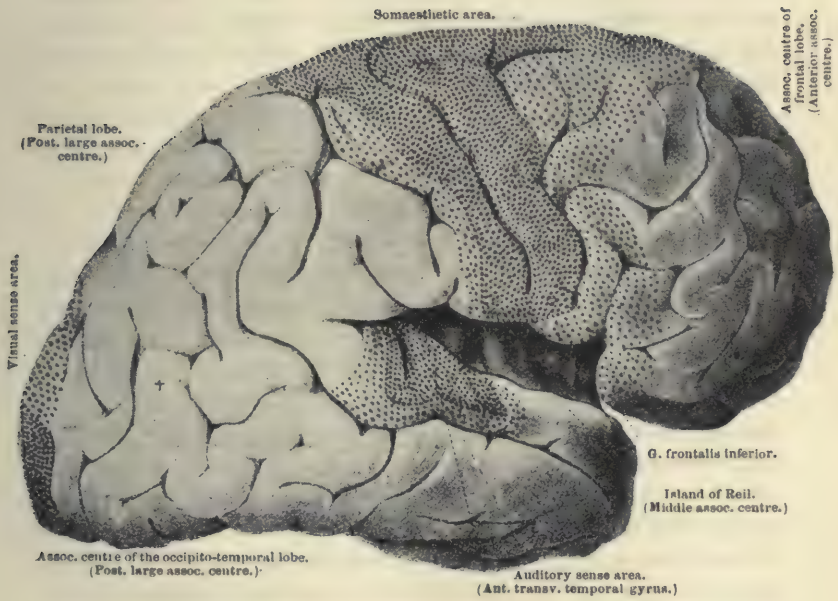


FIG. 5. External view of right cerebral hemisphere, showing sense centres and association centres. (After *Flechsig*.) The more closely dotted areas show the regions in which the majority of the sensory projection fibres terminate. The large areas between the dotted areas represent the association centres.

sequently fibres run out from this tract into adjacent areas, ending, however, only in that part of the cortex of the occipital lobe which shows the well-known macroscopic stripe of Vicq d'Azyr. It is interesting to note that fibres from the fovea centralis are believed to go to the cortex of both cerebral hemispheres. Such a distribution would help to account for the incomplete blindness from unilateral cortical lesions.

The fibres communicating auditory impulses to the cerebral cortex form the lateral lemniscus in the pons, and are connected particularly with the median geniculate body; they run out into the temporal lobe to terminate mainly in the transverse temporal gyri, especially in the anterior one. It is obvious, therefore, that the main portion of the auditory area of the cortex is hidden in the wall of the fossa sylvii, appearing on the external surface of the hemisphere only in the middle third of the superior temporal gyrus, *i.e.*, in that part of it which is in contact with the transverse gyri.

When all these sense centres have become ripe, that is, when the fibres going to them and the motor fibres passing from them to become connected with the lower motor centres are medullated, only about one-third of the whole area of the cortical surface has been concerned. This means that approximately only one-third of the human cerebral cortex is directly connected with the paths which bring sensory impressions from the periphery into consciousness or carry motor impressions to the periphery, causing muscular contractions. Two-thirds of the whole cortex appears to have nothing directly to do with the periphery, but to be reserved for another and apparently a higher work. These other areas, which are left uncoloured in the diagram, are the so-called association centres of Flechsig. They make up the main portion of the frontal lobe, a large part of the temporal and occipital lobes, the island of Reil, and occupy a large area in the posterior parietal region of the brain. For a whole month after birth these portions of the cortex remain unripe and are entirely devoid of myelin. But after the development of the sense areas of the cortex, Flechsig has been able to follow band after band of nerve fibres passing from the different sense areas into these other immature portions of the cerebral cortex, and ending there close beside one another, thus forming true centres of association between the different sense centres. And it is his belief that these association centres represent arrangements which unite the activities of the central internal sense organs and build them up to higher units. Sensory impressions of different qualities, visual, auditory, tactile, olfactory, and gustatory, are united, or, at any rate,

the anatomical mechanism is afforded for their union. The association centres have an entirely different microscopic structure from that to be made out in the sense centres, a topic into which, however, I cannot now enter.

Flechsigt believes, therefore, that these association centres are the portions of the cerebral cortex which, above all others, are concerned in the higher intellectual manifestations, in memory, judgment, and reflection. If his theory be right, the study of the association centres should be the especial object of research for the neurologist and psychologist. That they really are of definite importance for the intellectual activities has been shown by these anatomical studies, which might of themselves be deemed conclusive. But it must be conceded that clinical experience has also afforded a large mass of evidence in favor of the view. In certain of the diseases of the mind marked disorganization of the association centres has been noted, the microscope permitting the recognition in them of the destruction of many cells and fibres. In such cases, during life, instead of a connected train of thought, the mental processes may be confused and tangled. New mental pictures entirely foreign to the normal intelligence may appear, the capacity for using past experiences may be lost, and the knowledge of the results of certain acts be gone. It is in the study of general paresis that the most convincing clinical proof of Flechsigt's doctrine of association centres is to be found, and from a consideration of the varying symptomatology of this disease, taken together with the pathological lesions which have been proven to exist in such cases, some clues have already been gained toward the explanation of differences in function in the different parts of the association areas in the cortex. Flechsigt, in the first edition of his "*Gehirn und Seele*," stated that the anatomically demonstrable alterations of the brain substance in general paresis were often limited to the intellectual domains. He refers in the second edition particularly to the monograph of Tuczek upon *dementia paralytica* published in 1884, and recommends strongly the study of this paper in connection with his own classification of the different regions of the cortex.

It seems likely from Flechsigt's studies of the brain lesions in general paresis that this disease more than any other will afford the key for the deduction of psychic disturbances from alterations in the cerebral substance. In cases of the disease in which the lesions are widely diffused over very many different areas of the cortex no reliable conclusions can be drawn regarding the significance of the association centres; but occasionally the disappearance of nerve

Fig. 6.

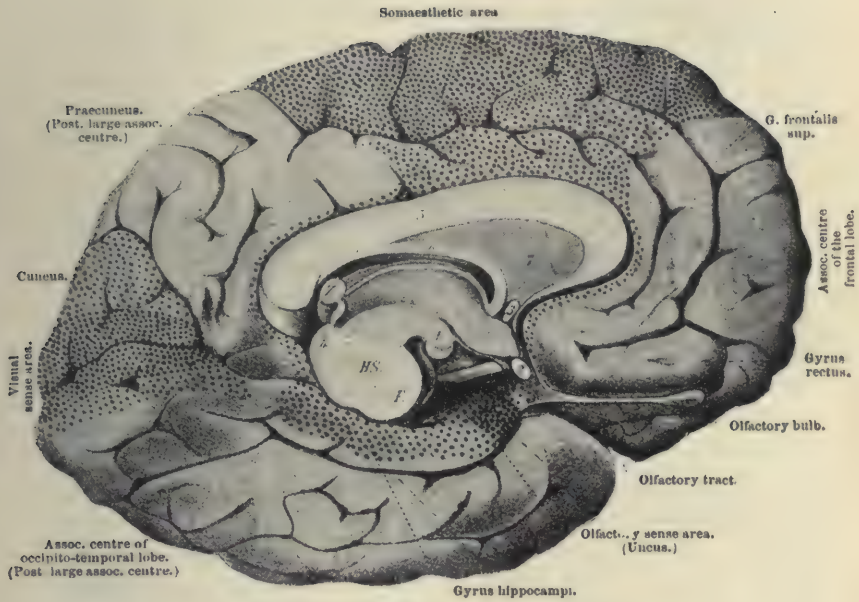


FIG. 6. Internal view of left cerebral hemisphere. (After Flechsig.)

1. Corpus mammillare.
2. Median section of optic chiasm.
3. Cross-section of anterior commissure.
4. Superior colliculus of corpora quadrigemina.
5. Corpus callosum (cross-section).
6. Fornix.
7. Septum pellucidum.
8. Pineal gland.
- HS. Tegmentum.
- T. Basis pedunculi.



fibres is limited almost entirely to the association centres, and in some instances especially favorable for the study of function the frontal association centre alone, or the large posterior parietal association centre alone, is chiefly diseased.

The study of such lesions and of the symptoms manifested by the patients during life has not yet gone far enough to justify many positive assertions regarding the specific function of the different association centres; but enough has been done to warrant the consideration of certain statements which possess some degree of probability. Thus, where there has been bilateral disease of the frontal lobes, that is, of the anterior association centre, there has been observed in the individual during life an alteration or loss of ideas regarding his own personality and his relations to what is taking place inside and outside his body—symptoms which are quite in accord with those observed in higher apes by Bianchi after extirpation of the frontal lobes. The phenomena vary of course according to the irritative or destructive nature of the lesion. The individual may in his mind connect his personality with mental pictures which have in reality nothing to do with himself; thus, he may think himself of enormous dignity, or that he is possessed of great wealth, or that he is a genius. In other cases, he fails to connect his own person in any way by means of association with external perceptions, so that he may forget himself or may fail altogether to observe his surroundings. Still, in possession of numerous ideas, he may speak in an orderly fashion, although he appears unable to distinguish the true from the false and the imagined from the experienced. Besides these logical defects he may show a diminution of his capacity for ethical and æsthetic judgment, so that he will perform acts entirely irreconcilable with his character as manifested earlier in his life. Even in the absence of emotion he may appear to be devoid of his normal self-command, but when subjected to unaccustomed stimuli, especially to sexual excitement, anger, or vexation, he may lose all control of his movements and acts, so that some simple influence may lead him to try to satisfy his desires without any regard to custom or good taste. In late stages of the disease imbecility may appear, with entire loss of the mental pictures regarding his personality.

The mental phenomena displayed in connection with diseases of the posterior parietal association centres appear to stand in marked contrast to those just outlined. They have been studied in cases of general paresis, but better opportunities for the observation of such phenomena are often afforded where there has been focal softening

of the cortex, due to vascular disease. Here the individual may be incapable of naming correctly objects outside his body which he can touch and see ; and if this centre on both sides be widely diseased he may not recognize at all the nature of these objects, so that he loses the power of forming intelligent conceptions of the external world. On the contrary, he may be entirely clear as regards his own personality ; he may appear to possess his self-control, and may show deep perversity of feeling or of the will, the specific character of the disease-picture consisting in his inability to recognize external objects, that is, to associate external sensory impressions with the memories of those of his previous experiences. On this account he may use external objects falsely ; he may confuse persons ; he has no certain ideas as regards space and time. His mental conceptions of the external world, the knowledge of these which he can put into words, and the power of interpretation of external impressions as the result of experience, are lost to him. He is, in severe cases, almost bankrupt in ideas, although his regard for himself and for those who are dear to him may be unaffected.

If one of the sense areas of the cortex alone be diseased, the clinical picture is entirely different from that presented by these purely intellectual disturbances. Here, again, we may have to do either with phenomena of absence or phenomena of irritation. A tumor pressing upon the auditory area may give rise to noises and other subjective perceptions of sound. Pressure upon the posterior central gyrus may lead the individual to believe that he experiences movements of his thumb, although his eyes convince him that it remains stationary. Again, a tumor pressing upon the uncinate gyrus has been known to give rise to subjective odors ; while a cysticercus cyst pressing upon the visual area of the occipital lobe has caused the arrival into consciousness of mental pictures of colored figures and the like. Destructive lesions of the sense centres may prevent the external sense impressions from entering into consciousness at all. There may be entire absence of mental confusion in such instances ; the patient recognizes the subjective character of the hallucinations, and so is not actually mentally diseased in the ordinary sense ; but if focal disease affect along with one sense centre several of the others, or the posterior large association centre, the picture of hallucinatory confusion is prominent.

Time will not permit me to discuss the so-called functional disturbances ascribable to conditions of exhaustion of different cortical areas dependent upon prolonged and violent emotion, various intoxications, impoverishment of the blood, and other causes. Suffice it

to say that, on theoretical grounds at least, more or less sharp criteria can be mentioned for the participation in the process of the different centres, especially the somæsthetic area, the frontal lobes, and the posterior large association centres. In many instances, however, the phenomena presented show, what we *a priori* might expect, that several of the sense areas and association centres are diseased at once. The various permutations and combinations possible will doubtless account for the manifold symptomatology of the great group of nervous and mental diseases, a symptomatology which as yet is in almost hopeless confusion, and which calls urgently for an ordering hand. It will be the task of psychology and neurology in the future to analyze the specific activities of the various regions of the cortex, and to correlate these with the mental phenomena of human beings in health and disease.

Flechsigs's researches have established the fact that the human cerebral cortex is made up of at least seven anatomically more or less well separated areas. As the phrenologist thought, the brain is the organ of the mind, and the whole is in reality made up of multiple organs. But, instead of calling these, as did the old phrenology, after certain qualities, friendship, good-nature, wit, firmness, and the like, thanks to Flechsigs's studies we can now adopt a more rational nomenclature. We can now speak of sense centres and of association centres in the cerebral cortex. The sense centres may be roughly grouped as the somæsthetic area, the visual sense area, the olfactory sense area, and the auditory sense area; the association centres for the present have to be designated according to their position as frontal or anterior, insular or middle, and parieto-occipital or posterior. Thus a distinct advance has already been made, and it is hardly too much to expect that further study will permit of much more complete differentiation and more definite localization of both kinds of areas.

It is not stating too much to affirm that advances in true psychology are to be mainly hoped for from strictly scientific investigations into the structure and function of the nervous system. Pure philosophical psychology has advanced but little beyond the concepts of Aristotle and the other ancients, and as Flechsigs says: "Medicine at all periods has been nearer the ideas believed in to-day mainly on account of the fact that the physician has had ever before him as the special object of his observations the human individual, presenting healthy or diseased conditions, in life and in death."

It would take too long to give even a brief résumé at this time of

the insight into psychological processes which are afforded by Flechsig's work. His recent publications speak for themselves, and his treatment of the subject cannot fail to prove interesting to the reader. Doubtless many of the theories which he has advanced as a result of his anatomical studies will not stand the test of time. But we owe to him a deep debt of gratitude for supplying us with a large mass of entirely new knowledge from which further investigations may start.*

The relative positions of the individual sense centres to the association centres are, as can be seen from the diagram, very peculiar. The posterior association centre is situated among the visual, auditory, and somæsthetic areas of the cortex; while the anterior association centre is related, in gross at least, only to the somæsthetic area and to the olfactory sense area. The middle association centre has adjacent to it the auditory, olfactory, and somæsthetic areas. When one remembers that the association centres receive bands of fibres which run into them from the adjacent sense areas the remarks made before concerning the specific functions of the different association centres will perhaps be more easily appreciated.

Flechsig, in his "Rectoratsrede," as well as in his later address upon the "Borderlands of mental health and disease," has laid especial emphasis upon the significance of the somæsthetic area. Assuming it to be the portion of the cerebral cortex where impressions regarding the body enter into consciousness, the centre which appears to have to do with the bodily emotions and bodily needs, and upon the excitability of which the crudity or delicacy of the instincts which enter into consciousness depend, as well as the centre whence start nearly all motor impulses which are concerned in conduct, be they those leading to the closure of the fist, the pressure of the hand, or the most delicate embrace. Flechsig believes that this somæsthetic area is to be looked upon as the main organ of character. This cortical area, connected as it is on the one side directly with the peripheral sensory and motor apparatus of the body, and on the other with the higher association centres in the cortex, stands, as it were, like a buffer intercalated between the organs of the body and the organs of the intellect. The character

*We should be particularly grateful for the definitiveness of the concepts of brain structure which Flechsig has afforded us. In this embryological self-analysis of the cerebral tracts, the bands of medullated fibres, stained by the method of Weigert, stand out as clear-cut on the yellow background of non-medullated nervous tissue as the lines of a diagram. The illustrations of sections in Flechsig's book are by no means fanciful. In his regular lectures during the spring semester of 1895, Flechsig showed us a large number of his preparations which bear out fully his anatomical statements and illustrations.

of the activities manifested by these complex cortical centres of which the somæsthetic area is made up may thus be influenced from either of the two sides. As Flechsig says, it represents a sort of arena in which, at least in the more nobly-endowed natures, the lower impulses struggle for the mastery with the higher feelings and ideas. To follow this struggle between the reciprocal influences of the body and the intellect will form one of the most stimulating problems of brain investigation, especially when it is remembered that the subject is of eminently practical significance. In the investigation of the brain it will be necessary to study the conditions which lead to an ennobling of the sensual instincts, whether it come immediately through bodily influences or from the other side through the intellect. Since, further, in these studies the presumptive existence of an ennobling of the intellect through refinement of the sensual instincts must be kept in view, the new brain anatomy and physiology is brought into contact with the fundamental problems of all scientific pedagogy and the aims of all true culture. The old *a priori* ideas concerning the antitheses of sensuality and reason, and of the "heart" and the "brain," would seem to find some actual confirmation in recent anatomical discoveries.

Furthermore, Flechsig sees in these newer studies the essential preparation for a physiological basis of ethics, so much desired by some of the writers of the last century. Inasmuch as the health of the cerebrum is essential for the control of the lower centres concerned with the instincts and emotions, as is proven by the cessation of the struggle between the instincts and the ethical feelings where the intellectual centres are paralyzed; and inasmuch as we now know some of the causes of the diseases of the sense-centres and of the association centres, and are convinced that many of these causes are removable or avoidable, the ethical significance of these studies becomes manifest.

It must be the aim of educators to enlighten the people concerning the hygiene of the body, and especially of the brain. We must not fear to teach the intimate interdependence of bodily conditions and mental phenomena, or hesitate to let the masses know that the abuse of alcohol, the over-indulgence of the passions, and mental and physical excesses of all descriptions, can lead to results of a most serious nature. Only by increasing knowledge, general and special, can we hope in coming generations to strengthen and make solid the foundations of the higher ethical feelings. All will agree that for the advancement of the race we must presuppose a social arrangement which will subordinate the blind instincts of the moral-

ly and intellectually deficient to the control of the deeper insight and the better will of an intellectual ethical aristocracy. If it is, in the main, the remarkable development of his association centres which has raised man so far above the level of all other living creatures, it is also by virtue of the function of these same association centres that man is to be elevated in the future beyond his present status. Flechsig, at the close of his "Rectoratsrede," makes brief reference to the aims other than practical of these newer studies. "Just as by means of one of the noblest faculties of our natures, namely, the thirst for knowledge, an instinct conferred upon human beings with the development of their association centres, we are forced to study the natural laws involved even in the domain of the mind, so the actual advances of our knowledge even in this field of investigation lead with the forcible necessity of a natural law to an ideal philosophy. The more the enormous potencies embodied in an intelligent individual become unveiled to our questioning reason, the more clearly must we feel that behind the world of phenomena there are controlling forces with which human knowledge scarcely dare lay claim to be compared."

LACERATED PERINEAL WOUND—DEATH FROM
SEPSIS—USE OF ANTISTREPTOCOCCIC
SERUM.

BY A. PRIMROSE, M.B., C.M. EDIN.,

Surgeon to the Hospital for Sick Children.

THE following case, the clinical history of which I reported at a meeting of the Clinical Society, is of considerable interest. The injury described is not a very common one, and therefore the case is worth recording. But there are other proofs connected with the case which led me to report it. The history is that of a patient who presented no very marked symptoms of septic poisoning until eleven days after the infliction of the injury: the symptoms of infection, in fact, developed after the opening of an abscess, the operation having been performed on the eighth day after the injury. Antistreptococcic serum was used in the treatment.

A little girl, 12 years of age, was admitted under my care in the Hospital for Sick Children on October 23, 1896, suffering from a lacerated wound in the perinæum. Six days previous to admission she had fallen astride of a picket fence, and thus received the injury. The external sphincter of the anus had been torn through, and a wound extended forwards from the anus towards the right labium vaginæ. The right labium was firm and solid to the feel, and considerably swollen, so that its left margin completely overlapped the vulva. Great pain was complained of on pressure over the injured parts. The temperature on admission was 102° . I did not see the patient until the following afternoon. She did not appear very ill, the temperature had dropped to 101° ; pulse, 100. She suffered little or no pain unless an attempt was made to examine the wounded parts. I left instructions to have her prepared for operation for the following day, thinking that in all probability pus would form in the right labium. Accordingly, at 3 p.m. on October 25, *eight days after the infliction of the injury*, she was brought down to the operating room. The temperature had fallen to 99.4° , and there was no increase in pulse frequency, which was 100. Chloro-

form was given, a catheter was passed into the bladder, and sixteen ounces of urine drawn off. The extent of the injury was now thoroughly investigated. The wound did not penetrate deeply; it passed through the external sphincter, opening up the rectum, the mucous membrane of which was split for an inch and a half on the anterior wall. The wound extended the same depth in the perinæum, opening up the posterior wall of the vagina, lacerating the hymen, and passing into the right labium majus. On manipulating here an abscess gave way and opened into the vestibule at the anterior extremity of the wound. An incision was made into the labium externally, an opening being thus established into the abscess from in front. Mr. J. J. McKenzie, who was present, obtained some of the pus for bacteriological examination. The vagina was douched with carbolic lotion, the abscess cavity irrigated, and a piece of iodoform gauze passed through it and retained for drainage; a warm boracic poultice was applied, and the patient sent back to bed, with instructions to the nurse to have the poultice frequently changed.

Mr. McKenzie found in the pus a pure culture of a streptococcus.

The following day the temperature rose slightly, reaching 100.2° ; the pulse, 96. The child did not seem as well as she should have been, but there were no alarming symptoms; the wound was draining well, and the swelling subsiding.

The next day (October 28) she complained of pain in the abdomen. The temperature in the morning was normal and pulse 80, and the evening temperature 102.2° . There was no symptom to cause much anxiety, but she was somewhat listless, and one could not help feeling somewhat uneasy about her.

October 29. Morning temperature 102° , and pulse 138; in the evening, temperature normal and pulse 120. It was quite evident now that she was suffering from the effects of septic absorption, and the rapid pulse with a falling temperature I looked upon as very unfavorable. At midnight, however, the temperature had again risen to 102° . Two grains of calomel were administered, and the wound dressed as before. She vomited, during the night, yellow-colored fluid several times. Urine was passed involuntarily.

October 30. The child was listless and indifferent. She complained of great pain on palpating abdomen. During the night the pain in abdomen had been so severe that the house surgeon administered one-half grain of morphia. She complained, occasionally, of great thirst, and asked for something cold. The temperature at 6 in the morning was recorded as 95.3° . Vomiting continued at inter-

vals. At 8 a.m., temperature 97.2° . The abdomen was not much distended, but was very tender on palpation, resonant on percussion. As there was some doubt as to the absence of urine in the bladder, chloroform was given and a catheter passed, but the bladder was empty. A mixture of morphia, strychnia, and atropia had been administered from time to time.

At 11.45 a.m., 10 c.c. antistreptococcic serum was administered hypodermically. Vomiting during the day became more persistent, and she now retained nothing on her stomach.

10 p.m., 10 c.c. antistreptococcic serum was administered.

October 31. At 2 a.m. temperature recorded was 99.2° ; pulse, 120; respiration, 28. Nutrient enemata were administered, but were expelled at once; the injury to the sphincter evidently prevented their retention.

At midday the note was made that "the pulse is of fair strength, and the wonder is that the child has rallied from the profound state of collapse in which she was yesterday morning."

2.45 p.m., 10 c.c. antistreptococcic serum was administered. Various means were adopted to allay the vomiting, but without avail. The patient became restless, and as this became a more marked symptom the administration of morphia with strychnia and atropia was repeated more frequently.

12 midnight, 10 c.c. antistreptococcic serum was administered.

November 1, 1896. Condition unchanged. The temperature was 101° at 2 a.m., and at 4 a.m. had dropped to 95° , with a pulse of 106. The vomiting became most distressing, and was repeated at short intervals. The abdomen was distended, but not at all markedly so. Saline solutions were administered by the rectum, but were not retained; a subcutaneous injection was thrown in over the chest.

November 2. She became delirious in the early morning and very restless, and died at 7 a.m.

A post-mortem examination was made seven and a half hours after death. Lividity was well marked. A gaping wound existed in the right labium majus two inches long. The perinæum was practically absent, the soft tissues having been completely destroyed; the rectum communicated through the sphincter with the vagina. The vestibule and ostium vaginæ presented a dark gangrenous appearance. The chest and peritoneal cavities were opened. Greenish-yellow pus was found free in the peritoneal cavity. Pus was also found on the dorsal aspect of the sternum extending along the internal mammary arteries. The pericardium contained one ounce of fluid somewhat opaque. A clot was found in the right ventricle, else-

where the heart contained fluid blood. Heart muscle was pale, muddy, and mottled in appearance; valves normal. The left pleural sac showed some old pleural adhesions, the left lung exhibited some small congested areas. The right side also showed some old pleuritic adhesions. There was a small tubercular mass in the right apex posteriorly. The glands at the root of the lung were enlarged. The peritoneal cavity was full of pus. The appendix normal. The stomach was adherent to the liver. Spleen pale, covered with fibrinous material, and on section very pale and granular-looking. Kidneys markedly pale, but normal. Right lobe of liver extended down to iliac crest; on section, pale and fatty-looking. On examining the bladder the outer end of urethra was found to be dark and gangrenous-looking, but the upper part was normal in appearance, as also was the bladder.

The rectum was dark and gangrenous-looking for one inch from anus.

The intestines were somewhat distended with gas.

A careful search was made for any direct communication between the perineal wound and the peritoneal cavity, but apparently healthy tissue everywhere intervened, and no such connection could be made out anywhere.

REMARKS.

The value of antistreptococcic serum in the treatment of septicaemia has not yet been proven. It is extremely difficult to determine the effects produced, in a given case, by the employment of this therapeutic measure. We would be justified in using it constantly if we had scientific proof that it introduced a something into the system which was the direct antagonist of the toxins produced by the streptococcus, and which was capable of destroying entirely, or at least diminishing, the toxins present in the tissues. At present, however, bacteriologists tell us that the effect produced by the introduction of antistreptococcic serum *may* have the reverse effect. It is now known to be germicidal in its action, and, further, we know that there are bacteria which, when killed off, are capable of producing more virulent toxins in their death than during their life. It is easy to imagine, therefore, that at a certain stage in the process antistreptococcic serum may be beneficial, *i.e.*, when the bacteria are not present in large quantities, and the individual is capable of withstanding the effects of the dosage of toxins produced on the death of the organisms. It is further possible to imagine that, when the streptococci are present in great quantity, the individual may succumb to the effects produced by the enormously increased dosage of toxins

produced by the death of the germs. We cannot judge, by any known methods, the number of streptococci in any given case ; consequently our treatment, whilst it *may* do good, is capable undoubtedly in some cases of directly causing fatal results. We therefore feel that the value of antistreptococcic serum is very questionable ; we cannot tell when it may be of service or when it may do positive harm. One is apt to use such measures in "otherwise hopeless cases," but, apparently, these cases (because of the large number of streptococci which are likely present) possess the very condition in which its use is contraindicated. These facts regarding the action of antistreptococcic serum became known to the writer after its use in the case now placed on record. Its action in this particular instance was not very apparent ; in fact, the progress of the case was not markedly affected by its use. One cannot find in medical literature any record of definite value obtained by the use of the serum, and we are forced to conclude that in the meantime its value is not scientifically demonstrated. The action of this serum is quite different from that of the diphtheria antitoxin ; the latter is not germicidal, and we have direct scientific proof of the value of its use as a therapeutic measure in the treatment of diphtheria.

Selected Articles.

SOME POINTS ON THE TREATMENT OF INFANTILE DIARRHOEAS.*

BY M. LE D'LESAGE.

DURING the last few years our knowledge of the etiology of infections of the digestive tract in children has much increased. It is well known now that milk fermentation by various micro-organisms is the most frequently observed cause. The practical demonstration of this opinion is furnished by the employment of sterilized milk. It is a well-established fact that the digestive infections have become more and more rare since the general employment of sterilized milk. Treatment has benefited by these new studies.

We do not wish to study in detail all the therapeutical questions involved. We will pass over the question of the various medicaments employed with lavage of the bowel (calomel, lactic acid, antipyrine, tannagin, benzonaphthol, and salicylate of bismuth). We will confine ourselves in this article to a description of blood-serum injections.

When a child is brought with digestive troubles it is best to use the following treatment :

(1) Milk diet, even sterilized, must be stopped. Milk not only keeps up, but increases the disease.

(2) Give the child water to drink—albumen water ; and if we wish to use drugs, one of the substances mentioned above.

(3) If the sickness is severe, either from the intensity of the general symptoms or the digestive phenomena, we must use sub-cutaneous injections either of artificial serum or of blood serum.

I. Injections of artificial serum. There are two varieties : in large doses and in small doses. There are particular indications for the use of each of these.

* Translated from *Revue Therapeutique*, 15th Dec., 1896, for THE CANADIAN PRACTITIONER by W. J. Greig, M.B.

(a) *Injections in large doses.* In this first method of treatment we attempt to put into the circulation by subcutaneous means a volume of liquid sufficient to replace the serum lost in the purging, as Cantani was the first to do in 1885 in cholera (we know that Professor Hayem obtained excellent results in the same cases by injecting liquid directly into the veins). In the hypodermoclysis of Cantani the quantity of artificial serum injected into the connective tissue is from four to six litres for an adult. This method has also been applied to other maladies (severe hæmorrhages, convulsions). Since the results obtained in cholera we can understand that these subcutaneous injections would be applied to the diarrhœas of infants characterized by very free watery evacuations (an infection of the algid type or cholera infantum). Luthon, of Rheims, was the first to apply, in 1884, these injections to the treatment of infantile cholera. He writes thus: "We have injected in these unhappy little creatures, doomed to death, this saline solution in doses of 5 grammes, and we have had the satisfaction of saving them in spite of the most unfavorable prognosis." In 1888 Weisse resumed this treatment, and injected a larger dose of 30 to 60 grammes; he obtained a rapid recovery in every case of infantile cholera in which he used it. In 1890, Sahli, of Berne, recommended these injections. In 1892, Wilde, of Heilbronn, in his own child, seven months old, on the point of succumbing to an attack of infantile cholera, used six injections of 25 grammes each; the child recovered. Demieville observed an infant of four and a half months attacked with cholera infantum resuscitated by hypodermic injections of artificial serum; he injected 120 to 150 grammes. The child soon appeared better, and in two days digestive troubles ceased. During the years 1890-93 Monsieur Hutinel studied these serum injections. These cases are recorded in the works of his pupils, Thiercelin and Marois. Recently Monsieur Picot has reported a case with collapse cured by these injections of serum. Since these writings these injections have become common practice. I have used them frequently for several years, and have very often obtained marvellous and unhoped-for results. To-day it appears to me to be the best treatment of severe diarrhœa, leaving far behind it in effectiveness intestinal medication. For several years I have been contented with the following practice: When an infant is attacked with an abundant watery diarrhœa with a tendency to chill I have not waited for the algid collapse; I make use of a serum injection, at the same time stopping all food. Intestinal treatment comes after. I believe that it is of the greatest impor-

tance not to await the appearance of the algid stage. If the algid stage becomes established the results will be still good, but it will be necessary to repeat these injections, when in the first instance a single injection would often suffice. In a word, we must not temporize.

We can employ one of these solutions :

- (a) Sodæ chlor gram vii.
Aquæ distil steril..... litre i.
- (b) The artificial serum of Prof. Hayem :
Sodæ sulph.....gram x.
“ chlorid..... “ v.
Aquæ distil steril..... litre i.

The injections are made subcutaneously with antiseptic precautions. We can also inject into the muscular tissue. Shampoo the part for several minutes after to assist absorption, and give three to six injections a day of 30 cubic centimetres each. The purpose of this treatment is to put into the circulation a large quantity of liquid to make up for that lost by the purging. Furthermore, it is well to notice that as circulation becomes more active the stimulating effect is evident. Such are the subcutaneous injections in large doses. The indication for them is an infection of the algid type with profuse watery evacuations.

(b) *Injections in small doses.* In some cases injections must be made in small doses of five cubic centimetres. The object is altogether different. These small but repeated doses, which have been insisted on by Cheron, cause an increase of arterial tension. (We know that injections of this kind have been successfully employed in adults, in neurasthenia, in long convalescences, and in post-operative shock.) M. Cheron and Debove, besides this stimulating action, have observed a passing elevation of temperature (beyond that of the disease). M. Hutinel has also observed an increased vascular tension and an increase of the secretions ; an increased excretion of urea and of the number of hæmatoblasts without change of that of the leucocytes. The indications for these injections in small doses are *emaciation, cachexia, dwindling of the child with a lingering chronic diarrhœa*. In these cases, where we hope to increase the energy of the organism, the density of the liquid is of more importance than its quantity. Thiercelin has obtained good results from them ; he uses once or twice a day five grammes of the salt solution or of the serum of M. Hayem, or else the solution of Cheron, which is intended for these small injections :

Phenic acid.

Sod. chlor.

Sod. phos.

Sod. sulphate, aa, gram i.

Aqua distil, gram 100.

The physiological effects of these injections must be closely watched, for, while their first effects are good, if continued too long they will produce a weakness in the child which will pass off when the injections are stopped. Thiercelin has carefully noticed this : " We have often seen debilitated children rapidly increase in weight under the stimulation of these injections, but these, if continued too long, have produced a state of unrest, with cries and sleeplessness ; they produce also a true lymphatic engorgement.

I have observed during the year very evident symptoms of lymphatic engorgement by this treatment carried to excess. The child will become pale and drooping, will present a slight œdema of the extremities and the eyelids ; he becomes cachectic, suggesting Bright's disease, but the urinary examination does not show any change in that fluid. This cachexia may be accompanied by enlargement of different glands of the body, which may become large and soft. This functional hypertrophy does not appear to be tubercular, as we will relate cases further on in which these glands diminished in size when the injections were stopped. Our conclusion is as follows : We ought to use these injections only in small numbers. When sufficient effect has been obtained we ought to stop them, so as not to reach the period of excitement, and of the lymphatic engorgement. Further, these injections may, in children predisposed to tuberculosis, be followed by an awakening of the latent disease. This is what we are now going to study.

The drawbacks to these small but repeated injections. M. Hutinel has observed that a febrile action is set up in children with the tubercular diathesis by these injections. In a healthy child the temperature curve is either not changed or not more than an elevation of two-fifths of a degree. On the contrary, with a tubercular child, there will be an increase of from .1 to 2.5 degrees. The increase commences about the sixth hour, and the highest point is reached in about twelve hours. The temperature is maintained at this point three or four hours, and then returns to the normal. This febrile reaction is exactly identical with that of tuberculosis. In addition, these injections in certain cases will provoke peri-tubercular inflammation, easily seen in the case of external lesions (bony, glandular or cutaneous), but probably also in visceral tubercloses. M. Hutinel, from a study of 176 infants, arrives at the following con-

clusions : "That if these subcutaneous injections in certain proportions give rise to fever in healthy subjects they will provoke in smaller doses much greater febrile reaction in the tubercular ; that these febrile reactions are sometimes accompanied by peri-tubercular inflammations which are not without danger ; that the intensity of these reactions would make us suspect the existence of latent tuberculosis, without, however, constituting a pathognomonic sign of the disease." I have used these injections in fourteen cachectic children with pulmonary bacillary lesions. In all of them I produced a permanent aggravation of the local condition. Therefore I have given up completely injections of serum in the treatment of infantile disease if pulmonary lesions exist.

Should the same rule be followed in latent tuberculosis when the child presents no sign of visceral change ? The question is difficult to answer. In the first place, a cachectic child with a little diarrhoea with healthy viscera has enlarged glands in the axilla and groin. What should we do ? We know that these simple adenites are often tubercular. I have treated five children answering to this clinical type with small but repeated injections of serum. In four of them after the third and fourth injection I have observed pulmonary lesions which forced me to stop the treatment. I believe that in these cases there existed latent centres of tuberculosis which have been in some way roused by the injections. In a word, we see that all injections of artificial serum or of salt water are capable of aggravating an existing tuberculosis (by provoking a peri-tubercular congestion) and of betraying a tuberculosis otherwise latent. Therefore the better line of action is, I believe, the following : injections in small doses are indicated in feeble children, providing the viscera are healthy, and the lymphatic glands normal. Every lesion, however small, pulmonary or lymphatic, is a contrary indication to these injections.

II. *Injections of blood serum.* Reinach has employed the serum of a horse not prepared—in a word, normal blood serum. He injected each day under the skin of the sick child ten to twenty cubic centimetres. This serum is followed by the same improvement as the artificial. It is equally a stimulant of the lymphatic system, as my master, M. Metchnikoff, says. Reinach says that this serum is superior, as it possesses more nutritive properties. The albumen of the blood nourishes the child. We know from the researches of Landois that injections of blood serum increase the transformation of albuminoid material and the rate of the formation of urea. After Hoppe-Seyler, twenty cubic centimetres of serum

contain $1\frac{1}{2}$ grams of albumen which correspond to 50 grams of cow's milk and 150 of mother's milk. Thus the object of these injections, whether artificial or normal serum, is to stimulate the organism, to gain time and permit it to react against the digestive infection. But can we obtain a blood serum possessed of the same stimulating properties united to a specific quality? In a word, can we obtain a serum specific for infantile diarrhœa analogous to that of diphtheria? We have hopes of this, and we have obtained the most encouraging results. In the first place, we must seek the means of obtaining this specific serum.

In another work we will show the following facts :

(1) In fermented milk the agent of fermentation is nearly always the bacillus coli communis.

(2) In 28 out of 100 samples of fermented milk the bacterium coli was possessed of virulent properties.

(3) These active milks killed little guinea pigs (below 200 grams in weight) in a dose of 1 cubic centimetre.

(4) This virulent bacillus isolated from milk killed without fail, in twelve hours, the guinea pigs with a dose of $\frac{2}{3}$ c.c. of bouillon ; with peritoneal septicæmia.

(5) No other microbe found in this active milk possessed any virulence, and all were inoffensive even in large doses.

(6) The fermented milk (72 samples out of the 100) which contained the normal bacterium coli, not virulent, did not kill guinea pigs even in large doses (10 to 15 c.c.), but when the milk underwent the same fermentation containing the virulent bacterium coli it killed in a dose of 1 c.c., and even $\frac{2}{3}$ c.c.

(7) These 28 active samples of milk provoked digestive infections in children. But there was isolated from the diarrhœa a bacterium coli possessing the same virulence as the one found in the milk.

(8) From these diarrhœas no other microbe was found possessing virulence.

From thinking of the injurious action of this bacterium in milk, it is only a step to hope to produce an anti-colic serum from this bacterium. Without entering into the details of bacteriological research which others have studied (Golgi, etc.), we will say that with this bacterium isolated from virulent milk and from the diarrhœas of sick children we can obtain, by the preparation of an animal (donkey), a serum which possesses specific qualities which the normal blood serum does not.

To study, on an animal, the action of this serum we must take

guinea pigs of a weight less than 300 grams. Larger animals than this are refractory to this virulent bacterium. If we inoculate the peritoneum with $\frac{2}{3}$ c.c. of a bouillon culture of this bacterium the animal dies in twelve hours from septicæmia. If, as a parallel experiment, we inject another animal of the same weight and in the same manner, and if an hour later we inject under the skin $\frac{1}{3}$ c.c. of anti-colic serum, the animal does not die. In half the cases he recovers; in the other half he lives ten or twelve days. In this last case there is a notable lessening of the infection (from twelve hours to ten or twelve days). If, instead of using anti-colic serum, we employ normal blood serum, or artificial serum, the animal dies as in the first experiment. There appears to be in this anti-colic serum a power of arresting or of lessening the infection of the bacterium coli.

The same result is obtained if, instead of isolating the bacterium, we use the milk; the anti-colic serum seems also to check the action of this milk.

We have studied, with Legrain, the action of this serum on 52 children attacked with severe diarrhœa, without any other treatment; in these cases the same virulent bacterium coli was isolated from the stools. The dose was 5 c.c., repeated or not, as needed. The results obtained were as follows: In 26 cases the morbid phenomena disappeared in forty-eight hours; in 14 cases we obtained immediately an improvement in the symptoms, and in five or six days the child was well; 12 times the result was *nil*. Whenever the diarrhœa was green, acid, or bilious, the injection caused the color to disappear immediately. This is important, as it shows an evident action of the serum on the liver. We know that each fresh intestinal infection is accompanied by an over-active liver and by a superabundance of bile.

Evidently, therefore, the anti-colic serum has a beneficial action. Certainly it is far from being perfect, or from giving constant results, but we hope for improvement. We hope by study to obtain a more active and more specific serum.

Progress of Medicine.

OBSTETRICS

IN CHARGE OF

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ASSISTED BY

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PUERPERAL ECLAMPSIA—ITS ETIOLOGY AND TREATMENT.

Dr. William Warren Potter, of Buffalo, in a paper read at the ninety-first annual meeting of the Medical Society of the State of New York, Albany, January 26, 1897, said, *inter alia*, that we seem to have arrived at the Renaissance of eclamptic literature; that while the subject is being discussed in magazine articles and societies it would not answer for this society to keep silent.

Though the pathogenesis of eclampsia is still unsettled we are certain that it is a condition *sui generis*, pertaining only to the puerperal state, and that to describe, as formerly, three varieties, hysterical, epileptic, and apoplectic, is erroneous as to the pathology and causation, as well as misleading in treatment.

The kidney plays an important office in the economy of the eclamptic. If it fails to eliminate toxins, symptoms are promptly presented in the pregnant woman. Renal insufficiency is a usual accompaniment of the eclamptic state. Overproduction of toxins and under-elimination by the kidney is a short route to an eclamptic seizure. However, many women with albuminuria escape eclampsia and many eclamptics fail to exhibit albuminous urine.

The microbic theory of eclampsia has not yet been demonstrated. The toxæmic theory in the present state of our knowledge furnishes the best working hypothesis for prevention or cure.

Treatment should be classified into (a) preventive and (b) curative. The preventive treatment should be subdivided into *medicina*

and hygienic, and the curative into medicinal and obstetric. A qualitative and quantitative analysis of the urine must be made at the onset. If there is defective elimination something must be done speedily to correct a faulty relationship between nutrition and excretion. One of the surest ways to control progressive toxæmia is to place the woman upon an exclusive milk diet. This will also serve to flush the kidneys and thus favor elimination. Distilled water is one of the best diuretics; it increases activity and supplies material, two important elements. In the pre-eclamptic state, when there is a full pulse with tendency to cyanosis, one good full bleeding may be permissible, but its repetition should be regarded with suspicion. If there is high arterial tension—vasomotor spasm—glonoin in full doses is valuable.

When eclampsia is fully established the first indication is to control the convulsions. Full chloroform anæsthesia may serve a good purpose. If the convulsions are not promptly controlled the uterus must be speedily emptied. This constitutes the most important method of dealing with eclampsia. Two lives are at stake, and by addressing ourselves assiduously to speedy delivery of the foetus we contribute in the largest manner to the conservation of both.

Rapid dilatation, first with steel dilators, if need be, then with manual stretching of the os and cervix, followed by the forceps, is the nearest approach to idealism. Only rarely can the deep incision of Dührssen be required. Cæsarean section should be reserved for extreme complications, as deformed pelvis, or to preserve the foetus when the mother's condition is hopeless. Veratrum viride is dangerous, uncertain, and deceptive in action.

In eclampsia of pregnancy, *i.e.*, prior to term, the aseptic bougie, introduced to the fundus and coiled within the vagina, may be employed to induce labor. Finally, to promote the elimination of toxic material, diuresis, catharsis, and diaphoresis, should not be forgotten; neither should the hot air bath nor the hot pack be overlooked.

POST PARTUM HÆMORRHAGE—DANGER OF GAUZE.

Schaeffer (*Rev. Obstet. Internat.*, December 1, 1896) agrees with those who distrust gauze as a material for uterine tampons in cases of flooding. If impregnated with iodoform or some other antiseptic, there is no danger of sepsis. If, however, it should happen, as is often the case, that the tampon fails to stimulate uterine contractions, and if when the bleeding is from a lacerated cervix the plug does not cause the torn artery to close by thrombosis,

the gauze increases the danger, for it acts as a capillary drain and takes up much blood. All who have attended many labors know that the tolerance of hæmorrhage is very irregular in different subjects, and an apparently trifling loss will kill certain women. Hence the best rule in flooding is not to allow one drop more to be shed if possible. Gauze, above all, if "absorbent"—which simply means more absorbent than commoner material—takes up many drops of blood at least. Schaeffer now uses non-absorbent gauze, prepared by impregnating it with gutta-percha. It can be mixed with iodoform or airol. By rolling it up into a ball it can be passed into the uterus, which it distends without absorbing any more blood. As a tampon the gutta-percha gauze retains its elasticity. Hence Schaeffer finds it suitable for inducing abortion.—*British Medical Journal*.

SURGERY

IN CHARGE OF

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AMPUTATION AT THE HIP-JOINT BY THE WYETH METHOD.

In the *Annals of Surgery*, September, 1895, Erdman reported eighteen hip amputations done in Bellevue, Roosevelt, St. Luke's, Mount Sinai, Chambers street, German, and Presbyterian Hospitals in New York city, with eight deaths and a mortality of 44.4 per cent. Of these eighteen cases seven were operated upon by Wyeth's method, and all recovered, leaving eight fatal cases in eleven amputations by other methods, a death rate of 72.7. Dr. Wyeth's description of his method, which has reduced so materially the danger of this, the most formidable of amputations, we take from the *Annals of Surgery* for February.

The patient should be placed with the sacrum resting upon the corner of the operating table, the sound limb and arms being wrapped with cotton batting and thoroughly protected from unnecessary loss of heat. The limb to be amputated should be emptied of blood by elevation of the foot, and by the application of the Esmarch bandage, commencing at the toes. Under certain conditions the bandage can be only partially applied. When a tumor exists, or when septic infiltration is present, pressure should be exercised only to within five inches of the diseased portion, for fear of driving the septic material into the vessels. After injuries with great destruction, crushing, or pulpefaction, one must generally trust to elevation, as the Esmarch bandage cannot always be applied. While the member is elevated, and before the Esmarch bandage is removed, the rubber tubing constrictor is applied. The object of this constriction is *the occlusion of every vessel above the*

level of the hip-joint, permitting the disarticulation to be completed and the vessels secured without hæmorrhage and before the tourniquet is removed. To prevent any possibility of the tourniquet slipping, I employ two large steel needles or skewers, three-sixteenths of an inch in diameter and ten inches long, one of which is introduced one-fourth of an inch below the anterior superior spine of the ilium and slightly to the inner side of this prominence, and is made to traverse superficially for about three inches the muscles and fascia on the outer side of the hip, emerging on a level with the point of entrance. The point of the second needle is thrust through the skin and tendon of origin of the abductor longus muscle half an inch below the crotch, the point emerging an inch below the *tuber ischii*. The points should be shielded at once with cork to prevent injury to the hands of the operator. No vessels are endangered by these skewers. A mat or compress of sterile gauze, about two inches thick and four inches square, is laid over the femoral artery and vein as they cross the brim of the pelvis; over this a piece of strong, white rubber tubing, half an inch in diameter when unstretched, and long enough when in position to go five or six times around the thigh, is now wound very tightly around and above the fixation needles and tied. If the Esmarch bandage has been employed, it is now removed. Excepting the small quantity of blood between the limit of the Esmarch bandage and the constricting tube, the extremity is bloodless, and will remain so.

In the formation of the flaps, the surgeon must be guided by the condition of the parts within the field of operation. When permissible, the following method seems ideal:

About six inches below the tourniquet a circular incision is made down to the muscles, and this is joined by a longitudinal incision commencing at the tourniquet and passing over the trochanter major. A cuff that includes everything down to the muscle is dissected off to near the level of the trochanter minor. At about this level the remaining soft parts, together with the vessels, are divided squarely down to the bone by a circular cut. At this stage of the operation the central ends of the divided superficial and deep femoral veins, as well as the arteries, are in plain view, and should be tied with good-sized catgut. This done, the disarticulation is rapidly completed by lifting the muscular insertions from the trochanters and digital fossa, keeping very close to the bone with knife or scissors, and holding the soft parts away with retractors. The capsular ligament is now exposed and divided, and, by forcible elevation, adduction, and rotation of the femur, it is widely opened,

the *ligamentum teres* ruptured, and the *caput femoris* dislocated.

If properly conducted up to this point, not a drop of blood has escaped, except that which was in the limb below the constrictor when this was employed. The remaining vessels which require the ligature should now be sought for and secured. There are, first, the *saphena vein*, which, on account of its proximity to the main trunk, should be tied; the *sciatic artery*, which will be found near the stump of the sciatic nerve; the *obturator*, which is situated between the stump of the adductor brevis and magnus, usually about half-way from the centre of the shaft of the femur to the inner side of the thigh, the vessel being on a level with the anterior surface of the femur; the *descending branches* of the *external circumflex*, two or three in number, usually found about an inch and a half outward and downward from the main femoral vessels beneath the rectus and in the substance of the crureus and vastus externus. The *descending branches* of the *internal circumflex* are insignificant, and are usually found on the level of the femoral vessels in the substance of the adductor longus and between it and the adductor brevis and pectineus.

In tying the larger femoral vessels I make it a rule to dissect both the superficial and deep femoral stumps back from one-half to three-fourths of an inch, so that I can apply the ligature behind any of their branches which may have been divided close to their points of origin, and I do not hesitate to include the large veins in the same ligature in order to save time. With the vessels I have mentioned quickly secured, there is really no necessity for even temporarily loosening the tourniquet. If the operator is not sure that he has found and securely placed the ligatures upon these larger vessels, it is a simple matter to loosen slowly the grasp of the tourniquet until the pulsation of the larger trunks is perceptible. No attention should be paid to the general oozing from the large muscular surfaces which have been divided. If every oozing point were ligatured, from half an hour to an hour would be consumed in securing a dry wound in the majority of cases. In order to hasten the operation and stop the oozing, I introduce a snug packing of sterile iodoform-gauze ribbon into the cavity of the acetabulum and the space between the muscles from which the bone has been removed, leaving one end of the ribbon to pass between the flaps for the purpose of its removal. With a long, half-curved Hagedorn-Fowler needle, armed with good-sized catgut, deep sutures are passed through the stumps of the divided muscles in such a way that large masses of muscle are brought tightly together when these sutures

are tied, taking two to four inches in the grasp of each suture. The needle is not passed in the proximity of the large vessels or the sciatic nerve, but in all other directions the muscles are rapidly quilted together. This effectively and rapidly controls all oozing. Nothing remains but to close the flap with silkworm-gut sutures, and cleanse it off thoroughly dry, seal it with collodion in its entire extent to prevent any infection from the genital or anal region, apply a large, loose dressing of iodoform and then sterile gauze, and a light bandage over the first light dressing. The pins are then removed and the remainder of the dressing completed. Preliminary pressure of the light dressing prevents oozing, and the wound remains dry.

When, from destruction of the parts by accident or disease, or by the proximity of a neoplasm, this ideal method is not practicable, any modification may be employed, preference being given to the incision which keeps farthest from the tumor and gives the healthiest flaps. When there is not sufficient material to cover the stump, it is even safer to err on the side of an unclosed wound and trust to granulation or grafting for ultimate closure.

In the first two operations I did, I divided the femur on a line with the incision through the muscles, tying the vessels, removing the tourniquet, and then dissecting out the upper fragment of the femur. I found it exceedingly difficult to disarticulate the head of the bone, and, at the suggestion of the late Dr. J. B. Murdock, of Pittsburg, Pa., who witnessed the operation, I have since left the femur intact in order to facilitate the disarticulation.

In regard to the steel pins, Professor John B. Deaver, of Philadelphia, has held the rubber tourniquet in place without them, substituting a tight strip of roller bandage underneath the tube in front and behind, an assistant making strong traction upward. Dr. Emory Lanphear, of St. Louis, Mo., succeeded in doing the operation with only one, the outer pin, in position. The fixation pins are not expensive, can easily be obtained in any part of the country, and obviate every risk of hæmorrhage. I see no reason for failing to employ them as directed.

PSYCHIATRY AND NEURÓLOGY

IN CHARGE OF

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OPERATIVE GYNÆCOLOGY AND INSANITY.

Dr. A. H. McFarland, in the *Cincinnati Lancet Clinic*, says that :
(1) Gynæcological operations are more likely than any other surgical procedure to distract the mind. (2) Hereditary antecedents of the patients should always be determined. (3) In insane patients operations should be performed only when the physical condition endangers life or renders it insupportable. (4) Patients precedent to the operation should be in a calm frame of mind ; hence moral treatment of the patient previous to operating is the best prophylaxis. (5) Inherited and acquired insane constitution is the fundamental factor in most cases of insanity. This conclusion does not, however, justify us in ignoring physical diseases immediately preceding or associated with insanity. (6) Healthy genital organs do not give rise to reflex symptoms ; consequently caution should be exercised in operating for the relief of insanity. (7) Operations may be satisfactory in properly selected cases.

APHASIA OF THE HAND.

Professor Grasset, of Montpellier, records in *Progres Médical* an interesting observation of a deaf mute, aged fifty, who with the symptoms of a gradual local softening of the brain from thrombosis of branches of the left Sylvian artery became unable to express himself as he had been accustomed to do in the sign language with his right hand. He could still talk with his left hand, but was unable to write, as he had never learned to use his left hand for this purpose. His understanding of what was said to him in the sign language was perfect, and his ability to read was unimpaired. There was a certain degree of paresis of the right arm, co-ordinated movements were not seriously interfered with, and there was no purely physical

difficulty in the way of his using the finger language. Mentality was also only slightly impaired. There was, therefore, in this case a true aphasia of the hand, combined with agraphia, which latter has been called by Charcot "aphasia de la main." It is an interesting question what part of the brain was especially in fault; the paresis of the arm would suggest a possibility of the arm centre, but we have here a defect that altogether exceeded that involving the general use of the hand, which ought to have been more seriously impaired were the finger or arm centre affected. The symptom of agraphia observed in this case is often attendant in motor aphasia from lesion of Broca's convolution. In this patient it would seem that there existed a speech centre distinct from that of the hand.

COLD WET PACK IN PARESIS.

The last medical report of the Government Hospital for Insane, Washington, D.C., refers to the satisfactory and, in some instances, surprising results in the treatment of paresis by the use of the cold wet pack. The cases cited are of striking interest. The conclusions are that the pack seems to act:

(1) By skin stimulations—by reflex action it increases force of heart's action and vascular tonus (a fact based on physiological experiments).

(2) Lower tone of vaso-constrictor nerves in brain, producing passive congestion (with reflexes of various sorts), while impaired metabolism is directly improved in this way.

(3) The derivative effects of hyperæmia of skin upon internal organs.

(4) Vessel depletion by sweating, with stimulation of absorbents, etc.

(5) Relief of congested perivascular lymph spaces in brain, and their intercellular connecting channels, thus directly affecting brain nutrition.

(6) The increased vascular tone, with consequent restoration of equilibrium in vascular pressure, the relief of the lymph channels, and a more normal supply of healthy blood to the starving tissues are supposed to be the causes contributing to the mental calm and frequent refreshing sleep which the pack brings.

The foregoing processes are all enhanced by massage following the pack, especially effleurage. The thermometer is always used to determine details of covering, need for artificial heat or cold.

The benefit of this active treatment is by no means limited to

cases of paresis. Melancholia and acute maniacal attacks are often relieved, but the important question of to-day is: In this hitherto incurable disease does it offer, even in a small proportion of well-established cases, some ground for hope? It can certainly do no harm to try it in other hospitals.

TRANSMISSION OF INSANITY.

Some figures are given in the *Journal of Mental Science* upon the frequency of hereditary insanity, based upon the study of 1,039 cases observed in the Essex County Asylum (Eng.). The daughters appear especially to suffer from the insanity of the parents, but the insanity of the father appears to be more often hereditary. Thus 106 insane fathers have had 117 sons and 138 daughters affected with insanity, while 256 mothers have transmitted the insane taint to 113 sons and 182 daughters. These figures confirm Darwin's law of heredity, according to which the characteristics of the father are more often transmissible to the male line, those of the mother to the female line.

COLONIES FOR EPILEPTIC PATIENTS.

At the meeting of the Ontario Medical Association, June, 1894, Dr. A. McKinnon, of Guelph, introduced a resolution calling attention to the necessity for an institution in Ontario solely for the care of epileptics. Attention had previously been called to the subject in the annual reports of several of the medical superintendents of this province, and a deputation was appointed to place the matter before the Ontario Government. Since then in the State of New York the Craig Colony for Epileptic Patients has been established, and its success has been such as to reflect great credit upon its projectors and to give additional hope for this very afflicted class. The colony now cares for 200 patients, or about one-fourth of those in the state needing care. Remarkable improvement is noticeable in those already admitted. Nearly every patient has gained in weight and in general health, and in all cases seizures have diminished in frequency. A school has been established, and various industries, as carpentry, sewing, painting, blacksmithing, are carried on. Patients of both sexes work in the field and garden, and eighty-three per cent. of males and seventy-six of females have been employed eight hours each day. One-half of the cost of maintenance has been produced by the colony. A similar colony has been established in Massachusetts, and its success is equally satisfactory.

Ohio has made separate provision also for this class. Of the 30,000 or 40,000 epileptics in England 1,100 are now cared for at Passmore Edwards House, a colony established in 1895. In the Province of Ontario there are, according to our asylum reports, over 300 epileptics in the several provincial institutions, besides the much larger number of similar cases which are taken care of at home.

HEREDITY AND CRIME.

Professor Belman, of the University of Bonn, relates the career of a notorious drunkard who was born in 1740 and died in 1800. Her descendants numbered 834, of whom 709 have been traced from their youth. Of these 7 were convicted of murder, 76 of other crimes, 142 were professional beggars, 64 lived on charity, and 181 women of the family led disreputable lives. The family cost the German Government for maintenance and costs in the courts, almshouses, and prisons, no less a sum than \$1,250,000; or, in other words, just a fraction under \$1,500 each. It would probably, says the *Medical Record*, be difficult to find a more remarkable example of the transmission of hereditary defects.

MORAL PARANOIA.

Dr. Martin W. Barr writes an interesting paper on the above subject in the *Alienist and Neurologist*. He defines two classes of paranoia, the mental and the moral; in the former the intellect is dominated by one or a set of fixed ideas and delusions, and gradually weakens and degenerates, and the ethical sense is not necessarily implicated; in the latter the ethical sense is either weak or wanting, and it may not be associated with intellectual deficiency, but often there is intellectual precocity. This moral form of paranoia is more frequently described as moral imbecility. Moral paranoia is divided into two kinds; in the first the moral sense has not been developed, or through accident or disease has been arrested, but it is capable of development through training; this class is comprised of people not wilfully bad, but of weak wills, easily led astray, and whose weakness of will develops and grows with their physical growth until they astound society with some sudden outbreak. There are many such at present in the care of various institutions in England and America, in which under proper discipline and training they become useful members of society, and as they are *totally irresponsible* they should always be under restraint, so that they may not become vagrants or criminals, or the tools of wicked men.

In the second class, owing to degenerative tendencies and practices through successive generations, or through the taint of some remote ancestor, the moral sense is absolutely wanting. In this type the intellectual faculties may be found defective, but more frequently are unnaturally developed, so that a person of this sort is dangerous to himself and his fellow-citizens. The worst class of criminals, the murderer and the harlot, are examples of this type. Patients of this class are in this condition from birth, and even as children are self-willed, obstinate, and delight in sulking, in annoying children, and in torturing animals. According to Lombroso, physical anomalies, such as cranial and facial asymmetry, premature synostosis, unusual frequency of left-handedness, large orbits, prominent zygoma, nervous contraction of face, and a cold, glassy, immobile look are found in this class. The line that separates these patients from criminals proper is distinct, and has long been recognized by alienists, but unfortunately the lawyers do not appreciate the nature of delusional diseases, nor the frequency of instances in which men not only lose all sense of responsibility, but are regardless of harm to themselves. Children of this class should be placed in special schools adapted to their needs, in order that a firm and well-directed discipline may enable them to attain some degree of self-helpfulness, and the Government might thus be spared the ignominy and cost of criminal trials and punishments. They should be detained for life, and as it has been found they can be trained this treatment should be put into practice, so that their lives may be made happy and useful, and they may become docile and harmless. Education does the greatest harm, the author asserts, as it fosters the ill we would cure ; in teaching them to write we give them increased power of mischief, and therefore instruction should be given *only* in physical work. To prevent moral imbecility is a larger question still ; the public required to be educated and informed that the intermarriage of persons tainted by insanity *must be prevented by strict legislation regarding the marriage contract*, and that during pregnancy great care should be taken to keep the future mother in a tranquil condition. The author further is of the opinion that castration should be adopted in cases of this kind, and mentions the names of several who strongly advocate such procedure.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF

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RETROSPECT OF THE YEAR 1896.

DIPHTHERIA.

J. MacIntyre (*Journal of Laryngology*, January, 1897) speaks of the abundant literature from all parts of the world by which our knowledge upon this subject has been increased during the year. Kanthack and Stephens deal with the passage of the diphtheritic bacilli to the lymphatics and blood vessels and their distribution by the blood stream. Dr. N. W. Smith startled the medical world of London (Report to School Board) by the statement that school life plays an unimportant part in the spread of diphtheria. On inquiring into the history of 2,168 cases, according to his figures only 124, or 5.7 per cent., were attributable to school influence. Wolfenden (*Journal of Laryngology*), in a long criticism, declares this position not proven; while Murphy combats the view and holds that school life is a very serious factor in spreading the disease.

Statistics have again been brought out by many able writers in support of the efficacy of serum therapy in this disease. Among its advocates are many of the most reliable and painstaking observers, as well as a large proportion of the medical profession, who conscientiously believe that very many lives are saved by its use. Still, there are many unbelievers. Lennox Browne has prepared a valuable review of the records of the treatment of diphtheria since serum therapy was introduced. After using the serum extensively in his own practice, and not being favorably impressed with the result, he records the names of forty-four eminent authorities in Europe and America "who express themselves as either definitely adverse to the treatment, or who deprecate the extravagant enthusiasm of some of its advocates." (*Journal of Laryngology*, December, 1896.) He concludes by expressing the opinion "that the benefits equally with the dangers of antitoxin are due to the albumen in the blood serum, and not to any special antidotal element."

NOSE AND NASO-PHARYNX.

Atrophic rhinitis. In the treatment reported there has not been much definite progress; though enthusiasts in special lines have given very promising results. Belfanti and Vedora (*Gaz. Med. de Turin*) maintain that the disease is produced by attenuated diphtheria bacilli; and that they have cured it by injecting antitoxin. Fage (*Rev. de Lar.*) attributes the disease to Lowenburg's cocco-bacillus; while Sattler considers it a true degeneration of the trophic nerves of the mucosa, and advises simple cleansing treatment. Capart and Cheval have continued the use of electrolysis with a report of 90 per cent. of cures by the bi-polar method. They attribute the result to nutritive changes produced by the current. Bayer, on the other hand, lost a patient from meningitis supposed to be induced by electrolysis applied for the cure of the atrophic disease. Pocher (*Trans. South Carol. Med. Assoc.*), having used many remedies, is still open to conviction of the efficacy of any treatment.

Hypertrophic rhinitis. The only new thing worth recording is advanced by Blondeau (*Journal of Laryngology*). It consists of partial or complete transfixion of the inferior turbinated by a galvanocautery needle. The needle or lance point is passed between the mucosa and the bone. The object aimed at is shrinkage of the turbinal tissues, without destruction of the surface epithelium. The risk of touching the ostium tubæ is not slight. In ten cases taken haphazard it occurred in six, setting up temporary ear trouble, tinnitus and fullness, all of which, however, passed away in a few days.

Purulent rhinitis of children. Fougeray (*Ann. des Mal. de l'Oreille*) gives two classes, congenital, due to gonococcal infection, and that of later date due to staphylococcus. In both cases he advises a 10 per cent. oily solution of menthol for local application.

Milligan draws attention (*Journal of Laryngology*) to the frequency of attic disease as a sequel to adenoid vegetations.

Septum. Septal deviations, ridges, and spurs have received a large share of attention. Ballinger (*Jour. Am. Med. Assoc.*) sums up his experience of electrolysis in reduction of spurs. He says the treatment is not simple, and requires much experience to be successful. It is more suitable to cartilaginous than bony growths, and sometimes perforations occur as a result. Roe describes the vomer as two ossifying plates with a layer of cartilage in the centre. Hence the lateral bulging that so often occurs in the septum.

Rhinorrhœa. Of the four cases reported during the year, those of Mermod (*Ann. des Mal. de l'Oreille*) and Thomson (*Trans. Lon.*

Lar. Soc.) were discharges of the cerebro-spinal fluid, one of them ending fatally. In the other cases atropine, one per mille, acted very well in checking the discharge.

Hay fever. Strangways (*Ann. Ophth. and Otol.*) advocates the local application of sol. of acetic acid. Lake, in retrospect of the year, speaks of this as distinctly new treatment. In this, however, he must be mistaken, as Sajous, as early as September, 1893 (*Universal Med. Jour.*), advocates the application of acetic acid.

In diseases of the antrum of Highmore, and the ethmoid cells, although many papers have been written, nothing essentially new has developed; except, perhaps, that at the meeting of the Vienna Laryngological Society there was unanimity of opinion (*Journal of Laryngology*) as to the non-existence of necrosing ethmoiditis.

Pharynx. The lingual tonsil has received a good deal of attention, and its pathological importance, direct and indirect, has been forcibly dwelt upon. Escat (*Rev. de Lar.*) treats of the diagnostic points of phlegmonous lingual amygdalitis. Lennox Browne (*Liv. Med. Chir. Jour.*) enters minutely into hypertrophy of lingual tonsil in connection with lingual varix. Sir W. Wade (*Brit. Med. Jour.*) calls attention to tonsillitis as a factor of rheumatic fever. A case of alarming hæmorrhage after tonsillotomy is recorded by Piergelli (*Arch. Ital. de Otol. Rhinol. Laryng.*) necessitating ligature of right common carotid. Price records a case of foreign body in the œsophagus located by Roentgen rays and removed (*Med. and Surg. Rep.*).

Larynx. New literature upon the larynx is very extensive. New instruments and new methods of diagnosis are constantly being brought forward by those engaged in special work to ameliorate chronic disease. Chappelle and Hubbard (*New York Acad. Med.*) give good results by creosote internally, and submucous injection of creosote into the larynx for tuberculosis of that organ. Newman (*Lon. Lar. Soc.*) reports two cures by local application of iodoform in ether and alcohol. Heryng (*Dutch Lar. Rhin. and Oto. Soc.*) reports a cure from application of sulpho-ricinate of phenol. Delavan (*New York Acad. Med.*) records papilloma of the larynx cured by applications of absolute alcohol. This recalls to mind the fact that Major, of Montreal, recommended the like treatment years ago. Many cases of successful removal of the larynx for malignant disease have been recorded. Many eminent laryngologists, however, are still undecided whether life on the whole has been lengthened thereby or not.

Of new instruments MacIntyre's cryptolaryngoscope for the

application of the "X" rays to the interior of the mouth for examination of the larynx occupies an important place, as likewise does Kirstein's autoscope for the direct examination of that organ. Van Aurooy (*Dutch Lar. Rhin. and Otol. Soc.*) was able to find and remove a large papilloma from the right vocal cord by the help of the latter instrument. Katzenstein (*Ber. Lar. Soc.*) describes a new laryngeal mirror to give upright images called the orthoscope. Myles (*Journal of Laryngology*) has invented a pair of ethmoid clippers for removing the floor of the ethmoid cells.

This synopsis is necessarily brief, but it contains the more important elements that have come under this department during the recent year.

Editorials.

HOSPITALS AND THE PUBLIC.

WE publish in this issue a letter from a correspondent on the subject of the relations existing between patients and the managers and the medical staffs in general hospitals. There has been in the past, and there is now, much misunderstanding, especially on the part of the public, as to the position of patients who receive hospital treatment. The general tendency of the present system is to pauperize a large portion of the community, who have no desire to become objects of charity as far as their food, clothing, etc., are concerned, but are quite willing or anxious to get medical attendance without paying for it. The evil appears to be growing, especially in Great Britain, the United States, and Canada. While this is generally recognized by the profession, it seems hard to find any practical solution of the many difficulties surrounding the whole question. We shall be glad to publish additional "particulars" from our correspondent in the future, when they are placed at our disposal. A free and open discussion might lead to good results; it certainly could do no harm. We would be glad to print the views of many physicians on the subject.

THE MEETING OF THE BRITISH MEDICAL ASSOCIATION.

THE local executive committee in Montreal is continuing its work in connection with organization for the next meeting of the British Medical Association. Dr. T. G. Roddick, the president-elect, went to England early in January, and remained some weeks. We understand that he is much delighted with his reception and the encouragement he received from the members of the general council and other distinguished members of the profession.

Since our last issue we have received from England the exact wording of the resolution of the council of the association, stating

who are and who are not eligible to be members and to attend the meetings of the association. This resolution was passed two years ago, and inasmuch as we hear on all sides that very large numbers of members of our profession in the United States are proposing to attend the Montreal meeting it may be well again to point out that, however much the local executive desires to welcome American practitioners, its hands are tied. Those visiting Montreal must either be members or invited guests if they are to enjoy the privileges of the meeting, and only British subjects can be members. The resolution runs as follows :

Resolved, that while recognizing it as both a duty and a pleasure to accord a hearty welcome to foreign medical practitioners attending the annual general meeting of the association, the council is of opinion and is advised that it cannot extend to such practitioners the privilege of actual membership, having regard to the origin and constitution of the association; and to the fact that in the opinion of the council the word "qualified," in By-law No. 1, means British subjects who are registered or entitled to be registered in the medical register of Great Britain or Ireland, or British subjects residing in any part of the British dominions who are legally entitled to practise in such dominions, and that such definitions cannot be further extended.

LORD LISTER.

IN our last issue we expressed our pleasure respecting the elevation of Sir Joseph Lister to the peerage. At the same time we expressed our regrets that the name of Lister was to be dropped, and that of Kinnear was to be adopted. We are glad to learn from the *British Medical Journal* that Sir Joseph has decided to take the title of Lord Lister instead of Lord Kinnear. The *Journal* says that in taking this course he has followed a precedent set by other distinguished men who have been raised to the peerage in recognition of services rendered to science and to art, as, for instance, in the case of Lord Leighton. It also states that several medical bodies have adopted resolutions of congratulation, such as the Royal College of Surgeons of England, the Royal College of Surgeons in Ireland, the Liverpool Medical Institution, and the Medical Society of London. The medical journals of Great Britain, almost if not quite without exception, express the opinion that the honor which has been conferred upon Lister has given genuine pleasure to the

general rank and file of the profession of that country. It is probably not too much to say that a similar feeling of gratification prevails in the whole medical world

DINNER TO DR. RODDICK IN LONDON.

DR. RODDICK, of Montreal, president-elect of the British Medical Association, was entertained at dinner by some members of the Council of the Association, January 20, at the Grand Hotel, in London. Earlier in the day he had attended the meeting of the Council to discuss the arrangements for the next meeting. From the account of the dinner given by the *British Medical Journal*, we learn that Dr. Robert Saundby, President of the Council, acted as chairman. Among those present as guests were Dr. Wilks, President of the College of Physicians, and Mr. Tegar, Master of the Apothecaries' Society. Dr. Saundby, in proposing the toast of "Our Guest," said the object of those present was to welcome Professor Roddick, their president-elect. He expressed in warm terms the feelings of gratitude they had towards him for crossing the Atlantic to confer with them, and hoped a large number of the members in Great Britain would attend the Montreal meeting.

Dr. Roddick returned thanks, and said he felt it was a great contract to bring the association to Montreal, but he was an Imperialist, and if there was anything by means of which he could bring more closely the premier colony of Canada to the British Isles, he would always be willing to do it. He assured them that the visiting members would receive a hearty welcome from the profession in Canada. He told them in eloquent terms what they might see if they took a trip across the continent, speaking especially of the great St. Lawrence river, Niagara Falls, the prairies of the Northwest, the Rockies, etc. He said he had the whole profession of Canada at his back, and in inviting them to come to see us next August he was speaking as the representative of Canada. His admirable speech, from which we have only given brief extracts, together with other interesting addresses, may be found in the *Journal* of January 23.

Dr. Roddick deserves the thanks of the profession of Canada for the great interest he is taking in the organization for the Montreal meeting. A journey across the Atlantic in midwinter is no trifling matter, especially to a busy man. We are glad our friends in England recognize that fact, and fully appreciate what Dr. Roddick has done and is still doing. We hope that the profession in this part of

Canada will do its share towards showing the President-elect next August that he was using no idle words when he stated in London that he "had the whole profession of Canada at his back."

THE FAMINE IN INDIA.

WE are glad to know that Canada is going to give some substantial assistance to those suffering from famine and plague in India. Certain figures given in the *British Medical Journal* will convey some ideas of what this famine means. Without assistance something like 37 millions of the people will be deprived of food for a period of from four to six months. In addition, 44 millions will not receive sufficient food. Such are the bare facts, and the authorities of India and Great Britain are endeavoring to partially supply the wants. The Indian Government will, it is expected, spend from twenty to thirty millions of dollars in trying to prevent death from starvation.

The *Journal* points out that there are humanitarian objects to be served beyond mere subsistence and prevention of death, as, for instance, medical relief and comforts for the sick, the aged, and infirm. The evil effects will continue long after the famine has ceased to exist. The vitality of many millions will be lowered to such an extent that diseases of all kinds will enormously multiply. Already a malignant plague is devastating the Bombay presidency. The death rate, about the middle of January, had become 200 per thousand, and there was then no indication that the crisis had been reached.

In the report published in the *Journal* we find that the record of deaths from plague in Bombay for the previous seven weeks was: 49, 51, 53, 67, 64, 173, 259. In addition, we learn that the mortality from the ordinary diseases is exceedingly high. In one week the number of deaths from remittent fever was 363. It was hoped that the Europeans in Bombay would suffer but little from the ravages of the plague, because such was the case when the plague invaded Hong-Kong. It appears, however, that this immunity in the latter city was due to the excellent sanitary conditions surrounding the Europeans, while in Bombay the same happy condition of things does not exist.

It is feared that the epidemic of plague may rapidly extend westward, and many of the European countries are seriously exercised in consequence. The *Journal* says it is rumored that the British Government will be asked to bring pressure to bear on the Govern-

ment of India to check, if not altogether to prohibit, the pilgrimage to Indian Mohammedans to Mecca this year. Since such an interference with religious beliefs would create very serious difficulties, it is unlikely that this extreme step will be taken. Under such circumstances the opinion that measures should be adopted to diminish the risks is correct. The *Journal* advises the establishment of a camp of observation with the necessary police, sanitary, and commissariat arrangements, to be maintained during the pilgrim season.

JENKINS v. COTTON.

THE recent suit in the Assize Court in Toronto, in which an action was brought against Dr. J. H. Cotton for alleged malpractice, was remarkable in many ways, and created a great deal of interest in the profession. We know of no case where a physician, under similar circumstances, was more thoroughly fortified by the justice of his cause. After the counsel for the plaintiff had concluded his statement of the case, and the presentation of his evidence, there was a general feeling of amazement among the medical onlookers. Is that all—is there nothing else? No! there was nothing in it. Who advised this unfortunate neurotic woman to pass through such a trying ordeal, involving considerable expense to her or her friends for nothing? We don't know.

A neurasthenic patient, with backache and numerous other aches, went into Dr. Cotton's office for treatment—her most prominent symptom being menorrhagia. The diagnosis, as regards the menorrhagia, was fungous endometritis, and curettement was advised. This operation was subsequently performed at the house of the patient, under an anæsthetic administered by Dr. Hay, with strict antiseptic precautions. The result was apparently satisfactory, and proved the correctness of the diagnosis. Dr. Cotton made all the visits he thought necessary, and then left instructions that he was to be sent for if anything went wrong. In the meantime the patient was out of bed, and going about the house, with no sign of anything like septicæmia resulting from the operation.

The plaintiff claimed that a salpingitis that subsequently developed was due to the doctor's negligence; that hæmorrhoids which existed then, and still exist, should have been treated; and that all her ills experienced since that time, which have prevented her from earning a livelihood, arose from Dr. Cotton's carelessness and want of skill; but produced no satisfactory evidence in support of such

contentions. Chief Justice Sir William Meredith, with evident reluctance, allowed the case to go to the jury, and the verdict was very promptly given in favor of the defendant.

Dr. Cotton was particularly fortunate in being able to show that he was both careful and skillful ; and, we may add, that his careful habits, especially in keeping records of his cases in a book provided for the purpose, ought to convey a valuable lesson to other practitioners who do not exercise similar care in taking notes, and keeping them for future reference. His notes in this instance were a great aid in many ways, and certainly showed that he was not likely to be negligent in any particular. We think we can offer the congratulations of the whole profession to Dr. Cotton regarding the fact that his reputation as a careful and skillful physician remains unsullied ; and, at the same time, we desire to express their regrets that he has been subjected to so much worry and vexation over a wearisome and unjust action at law.

HOUGH v. FORREST.

ANOTHER exceedingly vexatious and groundless suit was brought at the recent Assize Court against Drs. R. W. Forrest and J. Forrest, uncle and nephew, living and practising in Mount Albert. The plaintiff claimed five thousand dollars damages received through alleged malpractice in the treatment of a fractured leg. Dr. Cameron, of Toronto, who had examined the limb by order of the court, stated that he had never seen a fracture more skillfully treated, and that without the aid of the patient he could not have located its seat. He also said that certain disabilities complained of were the result of laceration of the nerves at the time of the accident. The neuritis which had developed was clearly recognized and properly treated. Dr. Dickson and Dr. A. J. Johnson agreed with Dr. Cameron. Mr. Justice Street, in his charge to the jury, referred in detail to the expert evidence, and stated that he had no hesitation in coming to the conclusion that the plaintiff had entirely failed to prove the charges he had preferred, and consequently he felt it his duty to withdraw the case from the jury, and dismiss it with costs.

In this case, as in that of Dr. Cotton, there does not appear to have been any shadow of just reason for entering the action. The Drs. Forrest are capable, honest, and conscientious surgeons, and evidently in this instance did their work with unusual care and skill. These lawsuits are exceedingly unpleasant and expensive ; and it

seems strange that even the most intelligent and careful practitioners are not free from serious dangers, which indeed constantly beset them. In a large proportion of such actions the plaintiffs are paupers who have received treatment without charge. We will admit that even under these circumstances the law is correct in not condoning negligence or want of ordinary skill ; but, we contend, a surgeon should in some way be protected from purely speculative suits for damages. As we understand the question, our profession only asks our legislators to amend the law so as to make a plaintiff in such cases give security for costs. We congratulate Dis. Forrest upon their success in this contemptible suit.

Correspondence.

HOSPITALS, WITH THEIR STAFFS, AND THE PUBLIC.

To the Editor of THE CANADIAN PRACTITIONER :

SIR,—In this letter I merely wish to draw the attention of the medical profession and the general public to the exceedingly misleading position hospitals with their staffs occupy in the minds of the people. Through a totally wrong idea of the whole management and working of hospitals, the people have been allowed to grow up with this false idea without any systematic effort being made to enlighten them. Grumbling on the side of the staffs there has undoubtedly been, and also on the part of the public, in which each condemns the other, sometimes most unsparingly. All the outcome of a misapprehension of their respective positions.

Let us take the working of a large general hospital, thereby meaning one where there are all the various departments of general and special medicine and surgery. The hospital is divided into private, semi-private, and public wards. The private wards are used by people who are able to pay extra for a room to themselves and attendance. This payment is perfectly separate from the fee of the physician or surgeon. But the occupant must always pay his physician or surgeon a fee; for being a private patient shows he is not one without means.

The semi-private wards are taken by people who wish and are able to pay a small additional sum to that required by the public wards, so as not to occupy these public wards. This also means that they are able to pay the physician or surgeon a moderate fee.

Now, the public wards are tenanted by people who are unable to pay at all, or only forty cents a day. This forty cents per day must be paid, and, if the patient can't do so, then it must be paid by somebody, or by his municipality, or town, or city. Now, if into the latter wards any patient comes, either through ignorance or dishonesty, who is in a position to pay a fee to his physician or sur-

geon, he should at once be told that his place is in a semi-private or private ward.

At the present time there is such an ignorance on the part of the public with reference to the whole hospital system that people occupy the public wards who have no right to be there. This wrongful position on their part is due to ignorance, but sometimes, I am sorry to say, is because they coolly determine to get medical attendance free. I may mention that all patients in the public wards are attended by the physician or surgeon free of charge. This free attendance is willingly given to the deserving poor; but when the attendance is asked for those able to pay, it then becomes a glaring abuse of charity. The public must also understand that the medical profession give their services to these patients without any payment. That is, the position is honorary, and has no salary attached. The public, I find, as a rule, are fully persuaded that the government or some corporation pays the staff a good round sum for that attendance. This is not the case, and its knowledge by the public should go very far to put matters right, for, as they say, feeling that the doctors are paid a salary, we, of course, think we have a perfect right to their services free.

Mr. Editor, if you insert this letter I shall, with your permission, follow it up and go more into particulars. I am persuaded that it is high time, both for the well-being and good-fellowship of the profession and public, that our situation with respect to each other be most fully stated from all points of view.

Truly yours,

G.H.B.

LABORATORY SPECIMENS.

To the Editor of THE CANADIAN PRACTITIONER :

DEAR SIR,—During the last ten years I have appealed to physicians from time to time to send me the human embryos which fell into their hands, and have in this way procured some very valuable specimens. These specimens have been cut into sections, and are now being modelled and studied very carefully. Yet a number of important stages are still wanting, and I therefore ask through the columns of your journal that physicians send me any material which they may obtain.

The best method to preserve human ova is to place the unopened ovum, without handling, and as soon as possible, in

strong alcohol. By this method the embryo within is well hardened for future microscopic study.

It is very injurious to wrap these delicate specimens in cotton before sending them by mail or express. A perfect method is to place the preserved specimen in a bottle filled completely with alcohol, thus imitating the condition of a *fœtus in utero*. If there be no air or cotton in the bottle, it is almost impossible to injure the embryo by shaking it.

FRANKLIN P. MALL,
Professor of Anatomy.

Johns Hopkins University,
Baltimore, Md.

Meetings of Medical Societies.

TORONTO CLINICAL SOCIETY.

(Concluded from last issue.)

DR. PRIMROSE pointed out that not only was there a difference in the toxins produced during life from those produced by the death of the germs, but that the action of the serum administered in cases of infection from the streptococcus was different in its action from that of the diphtheritic and tetanic serum; the anti-streptococcic serum was germicidal, while the antidiphtheritic was not germicidal.

Dr. Temple asked if there were any indications for section and drainage of the abdomen.

Dr. A. A. Macdonald referred to a series of some fourteen cases of sepsis reported in the *British Medical Journal* recently, in which the antistreptococcic serum was administered. There were two deaths. He thought as good results could be obtained by the old method of treatment, by removing the source of infection.

Dr. Primrose said that the signs of peritoneal invasion did not occur until so late a stage in the case that operation was not advisable. Not only might as good results be obtained from other methods of treatment as by the serum treatment in these cases, as the last speaker had held, but there was proof that the antistreptococcic serum did injury by producing the second toxin spoken of through the death of the germs.

Dr. G. S. Ryerson said that with the assistance of Dr. King he had made some observations of the effect of the "X" rays on the blind, having heard and seen that such cases had been able to see through the use of the rays. Some of the subjects were only partially blind, and others totally. In one case the eye was gone entirely. After a most careful examination they noted that those in whom there was some degree of perception of light, and also in those who could to some degree perceive bodies, the "X" rays were visible. Those who were absolutely blind had no perception of light whatever.

Dr. J. E. Graham presented a heart. The patient had four murmurs before death—a direct and regurgitant aortic, a presystolic mitral, and a systolic mitral. The aortic valves were badly degenerated, the result of syphilis. The mitral presystolic murmur, according to Flint, was due to the fact that the left ventricle never became free, there being always a certain amount of blood in it, the blood preventing the mitral valve from coming in contact with the wall; the segment of the valve being kept a little towards the centre of the chamber, when the left auricle contracted the blood would be driven over this prominent portion of the valve and the murmur produced. It was different in the heart shown. It was pointed out that when the chamber was dilating one of the segments was drawn over by the shortened chordæ tendinæ, the blood passing over which produced the murmur.

Dr. E. E. King gave a demonstration of the Roentgen rays. He described the method of production of the electricity, and the various apparatus needed to produce the ray. Many excellent skiagraphs were shown representing various normal and abnormal conditions. The fellows were able with the fluoroscope to examine their own and their fellows' osseous framework, and numerous articles separated from the tube by intervening objects.

Refreshments were then served, after which the society adjourned.

TORONTO MEDICAL SOCIETY.

THE regular weekly meeting of this society was held in the council building, January 15, Dr. W. J. Wilson, the president, in the chair. Minutes of the last meeting were presented by the secretary and adopted.

OSTEOMYELITIS.

Dr. F. N. G. Starr read a paper on "Osteomyelitis of the Femur," presenting mounted specimen.

The patient, aged three, had come under his care in August last. Five weeks before complained of pain in the left thigh. There was no mark or injury. Physician consulted at the time recommended the application of tincture of iodine. After ten days, in which there was no improvement, a second doctor was consulted, who opened the leg, evacuating pus from an abscess. The femur was found to be largely denuded of periosteum. The lower epiphysis was separated. Drainage was made. As medical attend-

ance could be made only at long intervals and the nursing was bad, the case did not do well. The child was brought to Toronto. Temperature, 102° ; pulse, 140; respirations, 48. The patient was weak, anæmic, and emaciated. Signs of distress and suffering were marked. Under an anæsthetic the shaft was found free, the epiphyses were separated, and a malodorous discharge exuded from the opening. The bone was completely riddled. After removal and irrigation, the cavity was loosely packed. A second abscess on the dorsum of the foot was opened, scraped, and irrigated. Within a few days an abscess formed on the left leg, but was not connected with the bone. The staphylococcus pyogenes aureus and albus were found in this last opening, while in the former the bacillus proteus and an occasional staphylococcus were found. The child finally succumbed.

The essayist pointed out that an early and correct diagnosis was most important in such cases, and an early operation by free incision desirable. He advocated the method he had used of removing the bone by first dividing the shaft into two segments, because it required only a small opening, and caused less laceration and contusion. A point of interest in the case was the absence of the staphylococci from the medulla. Perhaps, he said, they were present, but owing to their confinement they had been destroyed by their own toxins.

Dr. A. Primrose spoke of the difficulty of early diagnosis in these cases. He found fault with the present classification of inflammatory diseases of bone. He reported several cases of this disease in which the early diagnosis was exceedingly difficult.

Dr. Oakley asked if the same antiseptic precautions were necessary in these septic cases as in ordinary clean cases.

To this last question the reader of the paper answered emphatically in the affirmative.

ANEURISM OF AORTA.

Dr. J. Webster presented an aneurism of the aorta. The patient was a young man, strong and athletic. There was no specific history. In January, 1895, he began to complain of pain in the chest. The speaker saw him about a year later and diagnosed the condition, and ordered that he should be kept quiet, but these orders were disobeyed. He helped to lift a stove, after which the physical signs and symptoms were very much aggravated. On taking rest and under treatment he became considerably better, but again transgressed, and was sent to the hospital. The tumor was

large and perceptible, the sternum bulging out a great deal. The patient died about a month after leaving the hospital.

At the post-mortem the sternum was found to be eroded, and the tissues suffused with blood. The aneurism and the aorta were filled with clot. It had ruptured through the skin in the median line of the neck.

Dr. Webster showed a second specimen. It was diagnosed a carcinoma of the pylorus. There were the usual symptoms found with stenosis of the pylorus. Post-mortem, the cancer was found to involve the pyloric end of the stomach, but not the pylorus itself, there being healthy tissue between the cancer and the pylorus. The neoplasm was circular in shape.

ECTOPIC GESTATION.

Dr. J. F. W. Ross presented a specimen of unruptured ectopic gestation. He had seen the case in consultation with Dr. J. H. Cotton. The patient had a young baby. She had gone a few days over her menstrual period and then began to flow. After the flowing had continued for a time pain commenced in the left side. Dr. Cotton saw her and made a vaginal examination, and concluded that it would be wise to make a thorough examination under chloroform. A small mass could be felt, but it was impossible to state the dilatation was in the tube or just below it. Two weeks passed during which the patient was up and about, at the end of which time the speaker saw her again in consultation. It was decided that the dilatation was in the tube; that it was an unruptured ectopic gestation; and that immediate operation was called for. The next day operation was done and the specimen obtained. The speaker said that he had seen an earlier cause of death by tearing the tube from the uterus.

Dr. Ross gave the history of a second case. In April, 1895, he made an incision in the right iliac fossa into an abscess cavity in a young woman, aged 18, who was apparently in the last stage of sepsis. The illness had lasted some months. The pus was very offensive and streaked with fæcal matter. Irrigation and drainage were done and the wound partly closed, the wound being partly packed with iodoform gauze. Fæcal matter continued to discharge through the wound, and the temperature and the pulse remained elevated.

About two months after he curetted away old granulations around the abscess cavity. A portion of the intestine was found prolapsed into the abscess cavity through its posterior wall. The bowel was drawn up with forceps, the peritoneum stripped off its

surface, and the opening closed by several sutures. The cavity throughout was touched with carbolic acid and the wound closed by silkworm gut. An iodoform gauze drain was left in situ. Fæcal matter continued to discharge. The patient returned home to recuperate. In January, 1896, she returned. Dr. Ross reopened, and found that several other sinuses had formed. These were thoroughly curetted and touched with carbolic acid and packed with iodoform gauze. There were two other openings into the bowel. The larger one was at the blind end of the cæcum, at the point at which the appendix was originally seated. The openings were closed by means of stitches. A month after this operation fæcal matter again discharged through the wound. Another operation was attempted, but the patient nearly died on the table. The patient went home weighing sixty-eight pounds. She returned in January, 1897, weighing 132. A piece of bowel eight or ten inches long was found lying loose on the abdomen, evidently ilium and cæcum inverted through the opening. Opening up, two large openings were found in the intestines. The intestines were reinverted, and the openings were closed with sutures. The large perforation was an old ulcer of the cæcum. The patient was doing well, and a permanent cure is expected.

A third case was reported by Dr. Ross. The patient had a large fibroid of the uterus. Opening was made in the median line, the incision reaching from the symphysis to four inches above the navel. The ovarian and uterine arteries were ligated, and those of the round ligaments. The uterus was removed, except the supravaginal portion of the cervix. On account of bleeding, the cervix was transfixed with a needle and tied in two halves by an interlocked suture. The peritoneum was then tied over the stump and the sutures were drawn out through the lower portion of the abdominal wound, and the stump was fastened close beneath the incision by two of the silkworm-gut sutures passed through it and the abdominal wall. A drainage tube was introduced. The doctor then discussed the merits of this way of disposing of the ligatures, and that of bringing them down through the vagina.

The society then adjourned.

TORONTO PATHOLOGICAL SOCIETY.

THE first regular meeting was held in the Biological building; the president, Dr. J. Caven, in the chair. Members present: J. Caven, Anderson, Reeve, Wilson, W. J., Wilson, R. J., Thistle,

McKenzie, J. J., Peters, Starr, Greig, Fotheringham, Primrose, Ellis, W. H., Oldright, H. H., Oldright, W. By invitation, Drs. Rudolf and C. F. McGillivray.

Proposals for membership—Dr. L. M. Sweetnam, proposed by J. T. Fotheringham and H. B. Anderson.

President's address deferred on motion of H. B. Anderson and W. B. Thistle.

"Sarcoma of the Adrenals" presented by H. B. Anderson.

Specimen of acute corrosive poisoning of the stomach presented by C. F. McGillivray, of Whitby.

Discussion shared in by Drs. Anderson, Peters, J. Caven, Fotheringham, and Wilson, R. J.

Microscopic slides of alveolar sarcoma presented by G. A. Peters. Serial sections of tubercular glands by A. Primrose.

The meeting then adjourned.

The second regular meeting was held on November 28th, the vice-president, H. B. Anderson, in the chair. Members present : Anderson, Primrose, Fotheringham, Carveth, Hamilton, J. J., McKenzie, Starr, Oldright, H. H. Visitors, Drs. Rudolf and Wigle.

Proposal for membership—W. H. Pepler, proposed by H. B. Anderson and H. J. Hamilton.

Mr. J. J. McKenzie read some

NOTES ON THE NEW SERUM DIAGNOSIS OF TYPHOID FEVER.

(See THE CANADIAN PRACTITIONER, December, 1896.) Dr. Rudolf asked if there was any relation between the severity of the case and the reaction. There had not been a chance to observe that.

H. J. Hamilton : Is the reaction as complete at the end of three or four minutes as in twelve to fifteen hours? Yes.

G. Carveth : Is the test present in all stages? Yes.

J. T. Fotheringham : Is the reaction found in cases of typhoid when tuberculosis sets in late in the disease? Do not know, but think that tuberculosis might kill the typhoid bacillus.

H. J. Hamilton : Has any reaction been produced by bacterium coli commune? Some claim to have found it. Not found in my cases.

J. J. McKenzie read a paper on

EXPERIMENTAL TUBERCULOSIS OF THE IRIS IN A RABBIT.

The rabbit was inoculated on September 26, 1896. In twenty days tubercle was found in the iris. Bacilli, epithelial cells, and leucocytes were found. Giant cells absent.

A part of the same suspected urine was injected into the peritoneal cavity of a guinea pig. Killed in four weeks and bacilli tuberculosis were found in the enlarged lymph glands.

The reader of the paper thought the anterior chamber the preferable place for inoculation, showing the growth earlier and more clearly.

Dr. J. T. Fotheringham presented a

CANCER OF THE PYLORUS WITH HISTORY OF A GASTRIC ULCER.

Patient seen four years ago ; had been drinking heavily ; had a fit, apparently epileptic, followed by profuse hæmatemesis. No recurrence of hæmorrhage. Again saw the patient in August, 1896. Died two weeks later in the General Hospital.

Dr. Primrose showed a series of sections of mammary scirrhus, with secondary infection of glands of the axilla. One section was from an infected gland on the side opposite the affected breast.

Dr. Fotheringham : Was the infection of the gland on the opposite side a result of the original breast infection, or an independent infection ? Two infections would explain it better, but this may be too broad. The gland might become affected just as one might get secondary growths in other parts. Secondary growth to be distinguished from a spreading growth, *i.e.*, what is found in the glands of the affected side.

Dr. Primrose asked for an explanation in reference to the infected gland on the opposite side.

Card specimens : Enchondroma of phalanx and metacarpal bone, presented by H. Oldright. Had been growing twelve years. Patient now twenty-four years of age. Was removed from the little finger because it was in the road.

Meeting adjourned.

Book Reviews.

Books received :

AUTOSCOPY OF THE LARYNX AND THE TRACHEA. (Direct examination without mirror.) By Alfred Kirstein, M.D., Berlin. Authorized translation (altered, enlarged, and revised by the author), by Max Thorner, A.M., M.D., Cincinnati, O., Professor of Clinical Laryngology and Otology, Cincinnati College of Medicine and Surgery; Laryngologist and Aurist, Cincinnati Hospital, etc. With twelve illustrations. One volume, crown octavo, pages xi.-68. Extra cloth, 75 cents, net. The F. A. Davis Co., publishers, 1914 and 1916 Cherry street, Philadelphia; 117 West Forty-second street, New York; 9 Lakeside Building, Chicago.

ANOMALIES AND CURIOSITIES OF MEDICINE. Being an encyclopædic collection of rare and extraordinary cases and of the most striking instances of abnormality in all branches of medicine and surgery, derived from an exhaustive research of medical literature from its origin to the present day, abstracted, classified, annotated, and indexed. By George M. Gould, A.M., M.D., and Walter L. Pyle, A.M., M.D. Imperial octavo, 968 pages, with 295 illustrations in the text, and 12 half-tone and colored plates. Philadelphia: W. B. Saunders, 925 Walnut street. 1897. Prices: Cloth, \$6 net; half morocco, \$7 net. *Sold only by subscription.*

A SYSTEM OF PRACTICAL MEDICINE. By American authors. Edited by Alfred Lee Loomis, M.D., late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University. To be completed in four imperial octavo volumes, containing from 900 to 1,000 pages each, fully illustrated in colors and in black. Vol. I., Infectious Diseases. Just ready. Vol. II., Diseases of the Respiratory and Circulatory Systems, and of the Blood and Kidneys. In press. Vol. III., Diseases of the Digestive System, of the Liver, Spleen, Pancreas, and other Glands. Gout, Rheumatism, Diabetes, and other Constitutional Diseases. In active preparation. Vol. IV., Diseases of the Nervous System and of the Muscles. Diseases of doubtful origin, Insolation, Addison's Disease, etc. In active preparation. Per volume, cloth, \$5; leather, \$6; half morocco, \$7. Lea Brothers & Co., publishers, Philadelphia and New York.

Medical Items.

WE are indebted to DR. HURD, superintendent Johns Hopkins Hospital, for engravings used in Dr. Barker's article.

DR. MONTIZAMBERT, of Toronto, started for British Columbia, February 1, on an inspecting tour.

DR. MCCRAE (Tor., '95), who has been at Johns Hopkins Hospital for some time, is recovering from an attack of typhoid fever.

DR. J. FRANK MCCONNELL is practising in Las Cruces, New Mexico. In a recent letter he speaks of the salubrious climate, 75° at noon, 70° at midnight.

DR. THOMAS VERNER has removed from Toronto to Rossland, B.C. The gold mining boom is drawing large numbers of people to British Columbia. We wish the doctor all possible success.

DR. BRYCE, the secretary of the Provincial Board of Health, and Dr. Sheard, Medical Health Officer of Toronto, are working together with the object of ensuring a supply of pure milk for the city.

DR. WILLIAM OSLER, of Johns Hopkins University, Baltimore, has written Mr. Gage, treasurer of the Home for Consumptives, Muskoka, as follows: "I enclose my cheque for \$25, and you can put me down as an annual subscriber for that amount, as I feel that nothing that has been started in Canada will do more practical good."

LONDON MEDICAL ASSOCIATION. — At the annual meeting of the London Medical Association, held December 14, 1896, Dr. Meek, the retiring president, delivered an address in which he reviewed the work which had been done in the society during the preceding year. The following were elected as officers for the present year: President, Dr. J. Wishart; vice-president, Dr. A. Graham; recording secretary, Dr. W. M. English; corresponding secretary, Dr. W. J. Weeks; treasurer, Dr. R. Ferguson.

MEDICAL SOCIETY OF THE STATE OF NEW YORK. — At the last meeting of the society, held in the latter part of January, the following delegates were elected: To the Ontario Medical Association—Messrs. William R. Howard, Rochester; M. D. Mann, Buffalo; Roswell Park, Buffalo; Henry L. Elsmer, Syracuse; F. W. Limmer, Syracuse; Seneca D. Powell, New York; Daniel H. Cook, Albany. To the Canadian Medical Society—Messrs. C. S. Parkhill, Hornellsville; C. M. Rexford, Watertown; E. F. Brush, Mt. Vernon; W. J. Hermann, Rochester; Eugène Van Slyke, Albany; W. B. Jones, Rochester; Wendell C. Phillips, New York.

DOUBLE ENTENTE.

"I can't conceive," she archly cried,
 "Wherein you men can longer pride
 Yourselves from female rivals free,
 For surely we have grown to be
 Your peers in ev'ry human stride.
 It is a truth that none dare hide ;
 Yet why you men will not agree
 To recognize the new decree
 I can't conceive.

"Now, *entre nous*, won't you confide,
 And tell me true, all jokes aside,
 What difference the world can see
 Between your manly self and me?"
 "To tell you truly," he replied,

"I can't conceive."

—Anon. (*Medical Age*).

COMMENDABLE TESTIMONY IN A MALPRACTICE TRIAL.—The *Winere klinische Rundschau* for August 16 summarizes an account of a malpractice case from a journal that it calls "N. Fr. Pr.," which may or may not mean *Neue freie Presse*. It appears that the physician against whom the action was brought had been called to attend a woman in childbirth, and had undertaken some operation which he considered necessary, but had found himself obliged to leave it unfinished and send the patient into a hospital. There an operation was performed, and the woman died on the following day. At the post-mortem examination a laceration of the internal organs was found, also a foul canal, and it was concluded that the injuries had been inflicted with the forceps. In the complaint the physician was charged with having displayed lack of skill in the operation. Two expressions of opinion, says the account, were of noteworthy weight in the case. On the strength of Professor von Hofmann's necropsy, the judge held it to have been shown that the woman's injuries must have been inflicted before she entered the hospital, and that the physician's operative procedure was not in accordance with the rules of the obstetric art. Professor Schauta gave expert testimony as follows: "The first question is that of whether the operation was indicated, and to that I must answer yes. In this case I should have done the same thing myself; it accords perfectly with the rules of obstetrics. This I must maintain here in direct opposition to Professor von Hofmann's opinion. The woman's physician, to be sure, inflicted the injury with his instrument. But now comes the question, Is that pardonable or not? As to that, I must say that apparently the instrument deviated from its position in consequence of some slight movement on the part of the patient. The circumstances of private practice in such a case are peculiarly embarrassing. In hospital practice we anesthetize the patient, and she lies perfectly still. In this instance, however, there was no assistance, but that of the midwife. I may remark that all of us, from the first to the least, are often so situated as to have to say with regard to mishaps: Something has happened that might have been avoided. There are disastrous occurrences that are due to the extraordinary difficulties of obstetrics. The present case was one of misadventure, and surely it is not to be attributed to the physician's negligence or ignorance." The *Rundschau* commends Professor Schauta's testimony from every point of view, and so do we.—*Editorial in New York Medical Journal*.

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Original Communications.

INDICATIONS FOR OPERATION IN APPENDICITIS.*

BY FREDERICK WINNETT, M.D., M.R.C.S. ENG.,

Assistant Demonstrator of Anatomy, Toronto University ; Surgeon, Home for Incurables ;
Surgeon, Outdoor Department, Victoria Hospital for Sick Children.

WHEN invited by our president to read a paper before this society, it seemed to me that no subject so urgently called for discussion as that of appendicitis.

The widely different views which existed in recent years should no longer prevail with such a mass of facts before us, if only prejudice were laid aside, and that plan adopted which held out a reasonable hope of saving the larger number of lives.

Since individualizing is likely to continue for some time, it is necessary to consider the treatment recommended during the different stages.

*Read before Toronto Medical Society, January 21 1897.

I. DIAGNOSIS.

Colic is believed by Robert T. Morris to be a misnomer, and this opinion is supported by the observations of Flint, who finds that circular muscular fibres do not exist.

Catarrhal appendicitis is said by Murphy to exist in the proportion of one to 194 cases.

J. A. Macdougall, at the last meeting of the British Medical Association, said: In the great majority of cases, with ordinary care, the condition can be usually recognized, but at times there is a deceptive absence of relation between the symptoms, the physical signs and the lesion. All but two to four per cent. of peritonitis in men is said by J. H. Carters to be caused by appendicitis.

The case of Gambetta is frequently instanced as an example of the subacute form suddenly becoming acute.

Referring to the treacherous nature of the disease, Murphy writes: "Suppurative peritonitis cannot be diagnosed with any degree of certainty. It may exist and contain free pus with temperature 99° F. and pulse 80, and good facial expression. While retention appendicitis with peritoneal cavity free from infection may present the classical symptoms of peritonitis—thus: temperature, 105° F.; pulse, 140; enormous tympanites and anxious facial expression"—the use of opium masks the progressive character of some of the most important symptoms.

II. TREATMENT TO BE PURSUED DURING THE FIRST TWENTY-FOUR HOURS.

Bryant, of New York, believes the percentage of recoveries without operation to be sixty to eighty, while Macdougall puts it at seventy-five. The recurrences are believed to be between eleven per cent. and seventeen per cent. Treves, who is opposed to the early operation, puts the mortality of non-suppurative cases at eleven per cent., and in abscess cases at thirty to forty per cent. The Royal Infirmary, Edinburgh, has a mortality of twenty-five per cent., and St. Bartholomew and St. Thomas' Hospital a mortality of twenty per cent.

Murray, of Liverpool Infirmary, who operates only in abscess stages, reports twenty-three cases in all, with a mortality of seventeen per cent.

I shall give the expressed opinions of a few representative men.

Treves: During an attack an operation is seldom called for before the fifth day. Terms too strong cannot be used to condemn

the practice of immediate operation; by that I mean as soon as the diagnosis is made. It is not to be disputed that a fatal attack may commence mildly, and that it is not possible to foretell the degree of an attack by its mode of onset. But these terrific phases of the malady are exceedingly rare and not difficult to recognize. In these cases operate at once. Always operate if there is evidence or strong suspicion of pus.

Fowler: As soon as the progressive nature of appendicitis is assured, operate. Acute cases may run through all the stages in from thirty-six hours to five days. Acute cases, becoming subacute in a few hours, are next gravest, as it implies necrotic changes. Operated on two cases during first day. One recovered and one died of pneumonia (la grippe). Prognosis is only favorable in cases which are retrogressive in twenty-four hours, as evinced by the symptom of tenderness. Cases recovered without operation, 8.

Began to subside in 24 hours, 5

" " " 30 " 1

Mild case, 1

Well-marked case, 1

8

H. O. Marcy: When done early mortality is one or two per cent. Fatal cases were those in which the appendix had already ruptured and had scattered the bacilli into the abdominal cavity.

Mayo Robson: Operate if the onset is acute, with rapid pulse and tenderness over the appendix, without the presence of a tumor.

Robert T. Morris: The simple diagnosis of appendicitis I hold to be sufficient excuse for operation. Of thirty-seven cases of early operation without infected exudate, had no deaths.

J. W. White: Immediate operation is indicated when the onset of a case is marked by both suddenness and severity.

Murphy: Operating on all stages and conditions number 140; deaths due to operations, 2. Would you delay operating on a case that is progressing favorably? By that I mean, temperature 99° F., pulse 80, expression good, abdomen with no alarming signs? No. I have seen cases of this class go to the third, fourth, and fifth day, with all of the most favorable symptoms that could well be imagined, and on the sixth day die from suppurative peritonitis, which existed all the time. As we are unable from the signs and symptoms to determine the exact pathological condition, there is only one safe position to take, that is, to operate as soon as the diagnosis is made. In the first forty-eight hours the appendix is not

usually ruptured, and involves very little risk. The rule, first, last, and always, should be: operate in every case of appendicitis, promising or unpromising, at the earliest possible moment.

Comparing the results we have:

(1) Those who operate in very acute cases, and in abscess stage, with mortality of seventeen to twenty-five per cent., and there will relapse eleven to seventeen per cent.

(2) Those who take a middle course.

(3) Those who operate as soon as the diagnosis is made, mortality one to two per cent.; without relapses and practically without herniæ, but will operate unnecessarily on sixty per cent.

III. FROM THE TWENTY-FOURTH TO THE FORTY-EIGHTH HOUR AFTER ONSET.

Pus may form in two days, but usually not before the fifth day.

J. A. Macdougall: If at the end of forty-eight hours the symptoms ameliorate, and in which increased resistance and slight dullness pointed to tumor formation, then I would watch and wait events, for I have seen very many such cases get thoroughly well, and the great majority of them have no return of disease. Operate if pus forms.

Murphy and McBurney show by their early operations that the symptoms are identical in the early stage between local peritonitis and general suppurative peritonitis.

J. W. White: Whenever, during even a mild attack, the symptoms at the end of forty-eight hours are unrelieved or are growing worse, operate.

Charles A. Morton pleads for early operation in every severe case of appendicitis, because it is impossible to say but a general septic peritonitis has not already started or that a purulent collection may at any moment break through.

J. H. Carters: Operated on nine during acute stage. Three died from causes not due to operation, as general peritonitis, delirium tremens, and exhaustion on sixth day.

Fowler: During second day operated on twenty-two. Three died of septic peritonitis present before operating.

Murphy: Did 141 early operations. Two died, excluding general suppurative peritonitis present at operation.

Morris: Had fifty-nine cases; the infection limited to the immediate vicinity of appendix. No deaths. And of twenty-three localized abscesses, no deaths.

Comparing these results :

- (1) Conservative operators, mortality seventeen to twenty-five per cent.
- (2) Moderate operators. Fowler operated on twenty-two cases second day. Mortality fourteen per cent.
- (3) Early operators. Mortality one to two per cent.

III. PERFORATION.

Indicated by a sudden increase in the acuteness of the pain and a rapid diffusion of tenderness. There may be tympany, rigor, or diarrhœa.

John A. Wyeth : Could not foretell perforation.

Murphy : Appendix was perforated in eighty-seven per cent. of his operative cases.

J. W. White : Indications for operation are practically undisputed.

Fowler : Have seen appendicitis with temperature 99°F. and pulse 80. A remission of the symptoms, save local tenderness, may take place, and yet the disease pass steadily onward through all its stages to a fatal issue. Had a case of gangrene and perforation in twenty-nine hours.

If it perforates into abdominal cavity will recover if removed before exudation occurs.

Cases operated upon, 162.

Protecting adhesions absent after 48 hours in 10 cases.

Protecting adhesions absent after 3 days in 5 cases.

Perforation occurred (in these) in 7 cases.

Adhesions had given way in 22 cases.

Serum slightly turbid without general peritonitis in 6 days.

Recovered (of these) in 5 cases.

Willy Meyer : In first 12 hours operated on 4 ; died, 1. After 12 hours operated on 5 ; died, 5.

McBurney : Operated on 24 ; died, 10. All deaths due to pre-operative septic peritonitis. Cases of suppuration not completely separated from the general peritoneal cavity, but which had extended only over the peritoneum in the immediate neighborhood of the appendix, yield to operation almost without exception. A few hours suffice for the fluids to overflow the pelvis and carry the infection far and wide among the intestines.

These results indicate that perforation cannot be foretold, often not diagnosed in its early stage, and operation has been unsuccessful unless performed within twelve hours, or before general peritonitis sets in.

IV. CASES SEEN FROM THIRD TO SIXTH DAY.

Cases presenting indications of the beginning circumscription of the disease by adhesions, and which tend to the formation of localized abscess.

Murphy : Fifty per cent. fatal cases terminate before the end of the sixth day.

J. A. Macdougall : After the second day early adhesions are walling in, or lymph sealing a highly dangerous lesion. In reaching and removing the appendix we must approach it by opening the general cavity of the peritoneum, and by breaking down delicate adhesions which have arisen to protect from potent septic influences.

Richardson : Speaks of this time as "too late for the early operation, and too early for the safe late operation," and says "there is no more difficult operation in surgery than that of removing an appendix at this stage without infecting the general peritoneal cavity."

Willy Meyer : On fourth to sixth day a number of patients will be saved under palliative treatment who would die if then operated upon.

Fowler : Operation is safe and advisable.

During this stage operated on 69 ; died, 20.

Died as result of operation, 3. (Post-operative adhesive bands and obstruction).

Died, but not due to operation, 17. Pre-operative septic peritonitis, 15 ; hæmorrhage from iliac, 1 ; obstruction (appendix acting as constricting band), 1.

McBurney : An important and encouraging fact that has not often been referred to is that, although the apparent dangers of causing infection of non-infected part in the course of an operation for a diseased appendix is very great, yet in reality experience has shown this not to be the case. Such has not occurred in a single instance.

From these results we must infer that in expert hands there is no danger of infecting the general peritoneal cavity, and when peritonitis is not already present the death rate is only four per cent.

V. ABSCESS AND LOCAL SUPPURATION.

J. A. Macdougall : In simple appendicitis the gradual formation of a tumor recognizable on or after the third day may disappear quickly, or it may remain tangible for two or three weeks. Such are safe and simple, but under such a guise may appear certain dangerous conditions. The treatment is an unsettled question.

In appendicitis with abscess, the onset is more severe, and in many of these the occurrence of perforation is at their root. It may resemble general peritonitis and there may be pus without tumor. Operate if pus forms.

McBurney: Sudden severe pain felt toward the end of the second day in right iliac fossa, followed in a few hours by a rapid rise of temperature and the existence of a palpable, sensitive tumor of recent formation, invariably means suppuration and demands operation. Cases of suppuration and local peritonitis are almost always favorable if operated upon.

J. W. White: Indication for operation is practically undisputed.

Treves: Operate if swelling continues to increase with no abatement of fever, etc. If there is evidence or strong suspicion of pus, operate at once.

Mayo Robson: Operated upon fourteen; all recovered; onset acute in eight; appendix removed in eleven; time of operation first to fourteenth day; one quiescent and three relapsing.

Murray: Operated on ten, with one death.

Murphy: In ninety-four per cent. of acute cases pus is found outside of the appendix—may not be perforated. Operates at the earliest possible moment.

Operated on 19; cavity opened; from 50 hours to 10 days; one died.

Operated on 7; cavity not opened; from 8 to 14 days; all recovered.

All are agreed as to operating when pus is present. In tumor formation with subacute symptoms, some follow an expectant plan and risk an occasional perforation, while others operate on all cases with seldom a death.

VI. GENERAL SEPTIC PERITONITIS.

Macdougall: A quick, thready pulse, repeated vomiting, marked depression, it may be somnolency, severe continued pain, or pain which, while in itself relieved, is associated with recognizable advance in local signs, acute and extending tenderness, with increase in abdominal distension and thoracic respiration, are indications for operation.

Fowler (1894): In diffused septic peritonitis the abdomen is flat, inflammatory symptoms are asthenic; should be given the benefit of an operation. The element of time will govern the fate of these cases. Without suppurative changes they may be favorable;

with suppuration the prognosis is very bad and increases with time. Entire number of operations, 162.

In two cases there was general peritonitis without rupture of adhesions. Recovered.

In 30 cases from extravasation of pus, all died.

Up to tenth day, 39 deaths, of which 31 were septic peritonitis.

After tenth day, three deaths, of which one was septic peritonitis.

Four cases complicated with pregnancy, all died.

Deaths in non-operative cases, six.

Perforation and septic pneumonia, second day, two.

Perforation, etc., fifth day, two.

Perforation, etc., tenth day, one.

Septicæmia, twelfth day, one.

McBurney (1895): Lymph and adhesions have a favorable influence on prognosis. All such cases operated upon in two years, twenty-four; died, ten.

I. Cases recovered, fourteen, or fifty-eight and one-third per cent. Onset was acute in twelve. Age: all over fourteen but one, who was nine. In one case temperature 100°F, pulse 100, and in another temperature 100.4°F., pulse 88. Parts infected: whole cavity in 7; appendicular region and up to left in 1; appendicular region and pelvis in 4; appendicular region and down to right in 2.

It was primary attack in 12; adhesions, localized and ruptured, in 2; none in 5; few in 5; extensive in 2; appendix removed in 13.

Influence of time on operation:

During second day, 3 operations, all recovered = 100 per cent.

End of 48 hours, 9 operations, 6 recovered = 66 per cent.

After 48 hours, 12 operations, 5 recovered = 41 per cent.

II. Cases died, 10.

Onset acute; age: under 14 four; temperature, etc.: one was 101.5°F., pulse 110; one 103°F., and pulse 108; and one was 102.5°F., with pulse 100.

Parts infected: whole cavity 8, appendicular region and pelvis, 3.

Primary attack in 8; adhesions: none in 6; few in 3; pus sac ruptured in 1; appendix removed.

Cause of death in 9 cases was continuation of symptoms and shock.

Murphy (1895): Pus with staphylococcus and inert bacillus coli commune may be present in peritoneal cavity for days without excoriating endothelium or proving very harmful.

If normal glistening appearance of peritoneum is present,

patients recover. If streptococcus be present the peritoneum in a few hours loses its endothelium and looks blistered; not much pus; lymph in flakes; practically all die.

Bacillus coli commune, when pathological, resembles in action the streptococcus.

In early stage cannot diagnose further than presence of appendicitis. Suppurative peritonitis may exist and contain free pus with temperature 99° F. and pulse 80, and good facial expression.

Murphy: Operated on all cases, all stages and conditions, favorable or unfavorable. Deaths, 9.6 per cent.

General septic peritonitis, 11; died, 4; operated on from 33 hours to 11 days; primary attack in 9; appendix perforated in all but one.

Mayo Robson (1896): General peritonitis with pus, 6 cases; cured, 5, or 82 per cent.; all acute; time, 2 to 4 days; appendix removed in 4; one miscarried on second day, and was operated upon third day. Died, 1; operated on third day; was cold and collapsed before operation.

In the *British Medical Journal* of this year is reported a case of general septic peritonitis cured by antistreptococcic serum.

This shows a steady improvement. Beginning with Fowler's 30 cases without a single recovery, we have, later on, Murphy saving 36⅓ per cent.; McBurney, 58 per cent.; and, quite recently, the splendid results of Mayo Robson of 82 per cent.

These highly encouraging results are due to improved methods of cleansing and drainage, and, with the assistance of antistreptococcic serum, we may confidently hope for something still better.

VII. RECURRENT CASES.

J. W. White: Indication for operation is practically undisputed when:

- (a) Attacks of any type have been numerous.
- (b) Increasing in number or gravity.
- (c) Have at any time put the patient's life in great danger.

Fowler: Absolutely no reliance is to be placed on the character of recurrences as prognostic indications.

In 162 operative cases 33 per cent. had previous attacks, averaging about 3. Operated in intervals on 8; all recovered. Condition found in 3: Corkscrew and meso-appendix short, 1; thick and adhesions, 1; enclosed in peritoneum and degenerative changes, 1.

J. A. Macdougall: When medical means fail, when attacks are increasing in frequency, or are so severe as to imperil life, operate.

F. A. Southam : Operated on 10 cases. Collection of pus in 2 ; tensely distended in 1 ; hard faecal concretions in 1 ; abscess in 4. Advises only after second attack, as many get well.

F. Treves : Operated in quiescent stage on 150. Died, 1.

Bryant : Secondary attacks occur in 11-17 per cent.

Willy Meyer : An appendix which has been inflamed once should always be removed.

Mayo Robson : Remove two to four weeks after an attack.

VIII. RELAPSING CASES.

Fowler : Operated upon in acute relapse, eight ; recovered, seven ; died of septic pneumonia, one.

Operated upon in quiescence, twenty-two ; recovered, twenty-one ; died of tubercular ulceration, one.

Condition of appendix in twenty-three cases : Thickened and exudative inflammation, six ; fibrous degeneration and obliteration of cavity, three ; stenosis, cystic dilatation, and muco-pus, thirteen (perforated, five ; non-perforated, eight) ; tubercular ulceration, one.

Macdougall : Remove the appendix if an induration tender to the touch or a palpable tumor remains after one or more acute attacks, and when a sense of uneasiness is constantly present in the iliac fossa.

J. W. White : Operate when the condition unfits the patient for work or activity, or has caused local symptoms which are permanent or persistent.

Since one-third of acute cases operated upon had previous attacks, it follows that an operation during quiescence would have saved all the suffering and the lives of the 33 per cent. who died.

The character of an attack is no guarantee of future mildness, and it is evident that a patient should be advised not to risk a second attack.

Relapsing cases are all the more urgent.

IX. AS TO REMOVAL OF APPENDIX DURING AN ACUTE ATTACK.

Most surgeons agree with McBurney, who advises not adding danger of seriously infecting the peritoneal surface, and says the appendix is frequently destroyed by the suppurative process.

From cases reported where it has been left, it seems that about six per cent. have subsequent trouble and one per cent. die.

Murphy gives two per cent. of foreign bodies and thirty-eight per cent. faecal stones.

GENERAL CONCLUSIONS.

H. O. Marcy : He had never had occasion to regret having operated, while he had often felt deeply sorry that he had not done so.

John A. Wyeth : Had not seen a single death from the affection, which could not properly have been ascribed to delayed skilful interference.

Robt. T. Morris : Death, hernia, and suffering are preventable in appendicular cases.

Mayo Robson : I believe the early operation undertaken as soon as appendicitis is diagnosed, first advocated by McBurney, would lead to a far greater percentage of recoveries than the method of individualizing.

I have never regretted operating, but I know of several calamitous cases where delay at the request of the patient or his friends has led to a fatal termination, which might probably have been avoided had operation been more strongly urged.

Murphy : There is a growing tendency in the profession to shirk the responsibility of operating when the dangers are great ; *i.e.*, to defer operation on the most dangerous cases, and advocate operation on the obliterating or stenosing recurrent varieties, in which there is the least danger to the life of the patient from the disease. We must not swerve from our obligations to our patients, but should make every effort to rescue them, regardless of the praise or condemnation bestowed upon us.

The importance of this disease will be better appreciated when we consider that one case occurs yearly in a population of 2,000. I have personally, with the assistance of Dr. Bryce, consulted the certificates of death at the registrar's office, and have tabulated those of appendicitis, and also those for which it may be mistaken. There are nine under appendicitis, and I am confident there are as many more certified under the heading of peritonitis, etc. This places the mortality between ten and twenty per cent.

It will be noticed that not a single case of appendicitis is reported for 1886, while there is a corresponding increase of peritonitis.

If we have not the courage to act on our convictions we should, at least, place these results before our patients or their friends :

(1) Operation during first twenty-four hours with mortality of one or two per cent., and sixty per cent. unnecessary operations.

(2) Operations only on very severe cases and for suppuration, with mortality of seventeen to twenty-five per cent. (If eighty-two

per cent. of cases of septic peritonitis be saved, this death rate would be seven to ten per cent.

(3) Operating between these extremes with mortality of fourteen per cent. (If eighty-two per cent. saved as above, then six per cent.)

DEATHS IN TORONTO DURING 1896.

POPULATION 194,039.

Disease.	Sex.	Age.	Duration.
Appendicitis	Male 7	12 yrs. to 24 yrs.	4 days to 7 days.
"	Female 2	9 yrs. to 44 yrs.	4 days to 3 weeks.
Peritonitis	Male 4	3 yrs. to 77 yrs.	6 hrs. to 2 mos.
"	Female 12	17 yrs. to 64 yrs.	4 days to 3 weeks.
Pelvic Peritonitis Cellulitis..	Female 1	29	—
Chronic Pelvic Cellulitis.....	Male 1	57	6 days. (Dr. King.)
" " "	Female 1	—?	—?
Puerperal Peritonitis.....	Female 2	—	—
Pelvic Ovarian Abscess.....	Female 2	27 yrs. and 41 yrs.	—
Perforation of the Bowels....	Male 1	52	16 hrs.
" " "	Female 1	26	5 days. (Dr. Ross.)

1886.—POPULATION 118,493.

Disease.	Sex.	Age.	Duration.
Appendicitis	0	—	—
Peritonitis, etc	Male 11	—	—
"	Female 12	—	—

MELÆNA NEONATORUM.*

BY JAMES WALLACE SMUCK, M.D.,
TORONTO.

THE cases which I shall report to-night were very puzzling at the time of their occurrence, and having been seen in the country, miles from the possibility of an immediate consultation, I was left entirely on my own resources.

I shall content myself to-night with the report of two cases of *melæna neonatorum* which I saw, and then give you a brief résumé of the etiology and relative frequency of the condition, as found in the literature.

CASE I. Mrs. R. P., white, æt. 36, was delivered of her sixth child about 7 a.m., April 19, 1895; child a healthy-looking male. She was attended by a midwife, but in two or three hours I was sent for on account of an alarming hæmorrhage from the mother. I arrived at 10 a.m., and immediately attended to the mother; after which I was asked to see the infant, because it had, in attempting to nurse, given a little cry and vomited up a mouthful or two of blood, which the nurse said was very dark in color. Previous to this the child had passed per rectum some very tarry matter. The child was fairly well nourished, but seemed pale and bloodless; was very cold. There was once, during the time I saw it, some vomiting of blood, but not a very large quantity. The pulse was weak and thready; as near as I could count, 130 per minute. I did not attempt to take the temperature, as I considered quiet of more importance to the child. Instead of again allowing the child to be placed at the breast I told them it needed nothing, and had heat applied by means of hot flannels and hot-water bottles, and kept the child absolutely quiet. I did not think that medicines would be of much use, therefore gave none.

When I called next day I found a marked improvement in the child. It seemed brighter, more color, the respiration easier, pulse stronger, but still about 130. In the interval there had been occasional vomitings of blood—in all, five—during the first twelve hours.

*Read before the Toronto Medical Society.

and there had been two tarry stools passed. As the child appeared hungry, I ordered spoon feeding of sweet cream (fresh) one teaspoonful, boiled water four teaspoonfuls, with sufficient sugar of milk to sweeten. There was an uninterrupted recovery, and as the mother had milk in the breasts on the fourth day I allowed the child to be nursed afterward. I saw this child occasionally, and there was none more healthy in the neighborhood.

The only causative feature that impressed me at the time was the coldness, although I looked for bleeding points in the mouth, throat, and nose, and there were none. The mother was neurotic; and inclined to bleed easily. She said she had lost her previous child just the same way, but had not consulted a physician.

CASE 2. Mrs. E.S., white, Canadian, thirty-three years of age, gave birth to her sixth child November 13, 1895, after a tedious labor, to terminate which I had to apply the forceps, although very little force was necessary. The cord was wound once around the neck, but I quickly removed it, and respiration was established without difficulty. As soon as the pulsations in the cord ceased I tied and cut. Then handed the child to the most officious old woman standing near. She wrapped it up and laid it by the stove. There seemed to be a great deal of mucus in the mouth and air passages. Of course the old women said the child had the cold. During the time of washing and dressing a large quantity of tarry matter passed per rectum, which appeared to me meconium mixed with broken-down blood-clot. There was considerable mucus coming from the mouth and nose, with a gurgling sound in the throat. The room was somewhat cold, and I enjoined the body heat to be raised by hot flannels and hot-water bottles. I ordered the child to be kept quiet for twenty-four hours before putting it to the breast. There seemed no other indications for treatment, and I left, not expecting any further trouble, although I was satisfied that it was a case of melæna. I left word that I was to be sent for if any untoward symptoms developed.

In about nine hours the snuffling and gurgling, which had not entirely left, became worse, and continued to increase in violence for about two hours, when a severe hæmorrhage from the mouth occurred and I was sent for; before I could arrive, however, the child was dead. The hæmorrhages had followed one another rapidly, so that death had taken place within half an hour after the first vomiting of blood. There had been one tarry stool about six hours after birth. I examined the interior of mouth and nose; and as no information could be gathered I asked for a post-mortem examin-

ation, but was refused, so I have to content myself with conjectures as to the cause and condition.

In the family history the only noticeable things were: Mother a strong, vigorous woman, father weaker; previous child was asphyxiated at birth, and I could not establish breathing. The father had had gonorrhœa some four or five years previously, and the cure, to my mind, was doubtful, although I never examined him nor treated him. The mother I had treated the previous summer for metritis, which I suspected to be due to the gonococcus, but did not know definitely until after. In this case there may have been some injury to the brain by the forceps, although I had no difficulty in putting them on, and do not remember to have been better satisfied with my manipulation of them. The position of the cord in this case may or may not have been a factor in causation. Whether this condition existed in Case 1 or not I cannot say. In both cases the mothers had lost their previous children at birth.

In looking up the subject, I find that Lewis gives a résumé of his study of the literature contained in the library of the Surgeon-General's office in Washington. He states that only one hundred and eighty-three cases of melæna vera neonatorum were there reported. About as many different opinions as to the cause appear to exist as there have been observers. Some, such as Billard, Landau, and others, hold that ulcers in the stomach and duodenum are the cause. No doubt these are causes of hæmatemesis in the adult. Again, hæmophilia, hereditary or acquired, premature delivery, etc., were given as causes. In two or three instances the cord was wound around the neck at birth. Syphilis does not seem to be a potent factor. Neumann thinks that the hæmorrhagic diathesis is due to sepsis and not to syphilis.

It does not appear that the brain has been examined very frequently with a view to finding the cause, and this is the more striking when we think that Lussman, Ebstein, Brown-Séquard, and others have noted that injuries to certain nervous centres caused congestion of and even hæmorrhage into certain abdominal viscera, notably stomach and colon. In these the hæmorrhage has been capillary in character.

Pomorski reports a case of melæna at the autopsy in which was found congestion of and hæmorrhage into the lungs, and the gastric and small intestinal mucosa. At the same time there was hæmorrhage of the brain, which had destroyed, among other parts, the floor of the fourth ventricle with its vaso-motor centre. He then tried experimentally to produce melæna by destroying different parts

of the brain in newborn rabbits, and found that if the vaso-motor centre was injured either directly or indirectly (as by hæmorrhage into adjacent parts) congestion and possibly hæmorrhage from some portion of the alimentary canal occurred. He thinks that the brain hæmorrhages which have been found in autopsies of children dead with melæna neonatorum are no longer to be regarded as complications, but the cause of the other symptoms.

Ritter has given a résumé of some one hundred and ninety cases of hæmorrhage from the newborn, and in these thirty-four per cent. had melæna. In all, forty-five autopsies were made, in twenty-three of which the brain lesions were noted; such as meningeal congestion, inflammation, purulent and simple, œdema, extravasation of blood into meninges and brain substance, softening of the pons and medulla, and effusion into the ventricles of bloody serum. In only two cases where the brain was noted was there found no gross lesion. In Eppinger's case there were no gross lesions of the brain, yet there were micro-organisms in the blood, peritoneal, and cerebro-spinal fluids. He states that these organisms belong to the class known as monads, and he thinks the infection to have been through the mouth. Then, again, various bacilli and cocci have from time to time been noted. Neuamnn states that he found in the tissues of a syphilitic case in which death had occurred seventeen days after birth the *Bacillus pyocyaneus* B., and says this bacillus was not found until that time in human tissues.

Another explanation of melæna is that given by Loranchet, in which he attributes the melæna to the gradual chilling of the surface of the body after birth. The cold acts as a gradual depressant of the nervous system; general circulation is disturbed; peripheral circulation is slowed; the vaso-motor system is unbalanced. The change from the splanchnic cycle of the foetus to the cardio-pulmonary cycle of the newborn infant is interfered with, and in the struggle of the reflexes there is a reversion to the splanchnic cycle with passive congestion of the gastro-intestinal mucous membrane, which gives rise to the hæmorrhage. I think the most of us will be prepared to say with Professor Osler, that the precise etiology is not known. Homen says that melæna is a collection of symptoms without unity in its causation.

Now a few words with regard to the frequency.

Genrich says that Carans saw one in nineteen hundred and eleven births. Genrich himself saw one in twenty-eight hundred births. Buhl and Hecker saw eight in four thousand births. Spiegelberg saw two in five thousand births. Hensch, of Berlin,

saw but fourteen cases. The prognosis in such cases is very grave and seems to depend largely upon the amount of blood lost. The results have varied, being placed at from thirty-five to seventy-five per cent. One observer, Minot, of Boston, had the very large death rate of eighty-four per cent.

Of the one hundred and eighty-eight cases collected, the result was noted in one hundred and forty-six. Of these ninety-nine terminated fatally, being not quite sixty-eight per cent. The character of the labor was normal in forty cases, abnormal in twelve, and not noted in one hundred and thirty-three.

The condition at birth was noted thirty-six times, and twenty nine are given as healthy. In thirty-two cases it was the first child ; in eighteen cases it was the second ; in nine cases it was the third ; in five cases it was the fourth ; in three cases it was the fifth ; in three cases it was the sixth ; and in one case each it was the seventh, eighth, twelfth, and thirteenth. In three cases the mother is given as a multipara. In sexes the children were sixty-seven males and sixty-nine females. In seventeen cases the mother's health is given as good, and in fifteen as poor. The father's health is given as good in seventeen cases and poor in nine. The age at which melæna occurred was noted in seventy-nine cases ; of these thirty-one were one day or less ; thirty-four were between one and three days, and fourteen over three days. The shortest time after birth at which melæna occurred was two hours, and the longest was four and one-half months.

As regards treatment, some recommend bismuth subnit. and other drugs, but I doubt whether much can be done where the infant is very young, and believe quietness and warmth to be essential. Some have recommended ice externally, but it would seem more rational to give it internally. I think that feeding from the spoon is better than nursing, as nursing seems to increase the tendency to hæmorrhage.

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Selected Articles.

A NEW FORM OF ANTISEPTIC TREATMENT OF WOUNDS.

By DR. C. L. SCHLEICH,

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IF gelatine dissolved in water is exposed to formalin vapors, a chemical compound possessing completely novel properties is formed. The gelatine completely loses its gelatinous character, and becomes an extremely indifferent and resistant hard transparent body. Neither dry nor moist heat can dissolve it, neither organic nor mineral acids, alkalies, or alkali or acid salts affect it. When heated the mass becomes slightly extensible, but regains its stiff, elastic nature on cooling. The formalin, which is not mixed with, but chemically combined in, the compound, also becomes inactive, so that hypomycetes have sometimes been observed on the surface of gelatine plates hardened with formalin, and when broken into fine powder and mixed with bacteria the compound exerts no kolyseptic influence.

It was the object of my investigation to ascertain whether it is possible for the formalin-gelatine to give up its formalin in the organism and so to effect an antiseptis by means of the tissues elaborating their own antiseptic from this non-antiseptic and non-toxic substance.

As a trial the incorporation of formalin-gelatine in the abdominal cavity of a rabbit was attempted. A piece of dry formalin-gelatine about the size of an apple was inserted and sewn up with aseptic precautions. The rabbit lived and remained perfectly well during the subsequent six and one-half weeks. When I then reopened the abdomen I found immediately under the old opening, in a coil of intestine, a radiating horny connective tissue about half the size of the piece of formalin-gelatine inserted, but, to my great

astonishment, no sign of the formalin-gelatine itself. Section of the newly-formed connective tissue explained the situation at once. In the centre of the neoplastic tissue was a soft, whitish nucleus about the size of a hazel-nut, which apparently constituted the remainder of the material.

This was most astounding, that the peritoneum, leucocytes, and body juices should have dissolved in so brief a period a substance which exhibits such great resistance to solvents outside the body. Still more surprising was the fact that the implantation carried out without special precautions in the body of a rabbit, which is specially disposed to lymphomatous eruptions, developed no sign of cheesy degeneration around the smooth cicatrix.

This experiment I have raturally repeated, and also on pigeons and dogs, mixing in some cases even bacteria with the powdered formalin-gelatine, after having determined absence of kolyseptic action in the powder. The powder was absorbed without reaction. Supported by this experience, I began to employ powdered formalin-gelatine for the treatment of wounds, and found that it answered all expectations. The human system also decomposes formalin gelatine with continuous liberation of the antiseptic. Even contact of the tissues with this preparation is sufficient to cause liberation from the absorbed gelatine *in statu nascendi*, molecule by molecule, a slow continuous evolution of formalin, which effects an extremely practical wound sterilization. Here an antiseptic it used continually, as it is formed in the molecular condition. The application is a permanent one, and equally active in the wound at all times. Hence the difference in the principle of this method from all previous antiseptic measures. In the latter a temporary, and for a time very energetic, contact action of the antiseptic may take place, but in consequence of the formation of almost insoluble compounds between antiseptic and tissues subsequent action is prevented.

If the experimental proof of the constant action of the formalin-gelatine is doubted, the pre-eminent clinical utility of this material for healing wounds must be recognized. With the aid of this powder all acute purulent processes are overcome and a guarantee is afforded for the aseptic course of the wound without further measures. I have employed it without drawback in 120 cases of acute purulent processes, in ninety-three aseptic wounds, in four compound fractures, and in two deep scalp wounds.

At the same time I would mention that, instead of the strict aseptic measures usually adopted, even in the most complicated wounds, only mechanical purification was carried out, and the pow-

der carefully dusted over all the wound, with the effect that in all cases the purulent processes were stayed within twenty-four hours, the compound fractures healed aseptically and without fever, and in all cases of aseptic operations the presence of the powder afforded a guarantee for uninterrupted healing.

In presence of fresh blood and in clean wounds, the powder forms in a few hours an absolutely dry and very firm scab. In fresh purulent cases, if no necrosis of the tissues is present, the formation of pus ceases completely within twenty-four hours, and frequently pure serum instead of pus flows from the wound. Such wounds always remain soft and unreddened round the edges. Furuncles, carbuncles, and phlegmons can be brought under control in twenty-four hours, so far as the powder comes into contact with healthy or inflamed tissues; at the same it is characteristic that the blood in the bandage remains bright red, which proves the liberation of formalin, which alone possesses this property of keeping the blood corpuscles red.

Production of pus, if no necrotic residues are present, is stayed at once, and the healing process shortened. If necrotic tissue is present, as in old ulcera cruris and in tuberculous and luetic infections, the formalin-gelatine remains inactive, but develops its properties all the more in acute inflammation, and is a prophylactic to infection. Fresh wounds I no longer disinfect, but leave their healing to the activity of the tissues. The healing of wounds is so satisfactory that the most critical eye can detect no fault therein.

Experimental investigation of the new vulnerary by my friend, A. Gottstein, showed that hydrochloric acid-pepsine solutions are in like manner able to decompose formalin-gelatine outside of the organism. This discovery extended the application of formalin-gelatine to the treatment of wounds where the automatic development of the antiseptic failed, namely, where necrotic tissue and masses of dried secretion prevented the gelatine coming into contact with the healthy tissue.

In such old wounds the powder should be scattered over the wound as usual, and then moistened with

Pepsini.....	gr. lxxv.
Acid hydrochlorici	℥.v.
Aq. dest	℥.iv.

The ferment effects the decomposition of the molecule and constant development of formalin vapors, otherwise brought about by the healthy or inflamed tissues, but which the paralyzed or necrotic cells are unable to do.

To summarize briefly, we possess in powder form a remedy which, in contact with clean wounds, forms a firm scab, without other disinfectant measures, in the course of a few hours, so that primary stitched wounds are in the shortest possible time covered with a protective layer which prevents infection. The formalin-gelatine is further able, by the molecular antiseptis set up by cellular activity, to destroy bacteria present in the tissues, and enables the cellular tissues to rapidly become masters of the situation. The formalin-gelatine stops acute purulent processes with great certainty, if after incision and application of the powder the production of tissue and liberation of formalin vapors is allowed to go on undisturbed; in presence of much necrotic material the cell activity can be supplemented by digestion with pepsin-hydrochloric acid.—

Polyclinic.

Progress of Medicine.

MEDICINE

IN CHARGE OF

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HOT-AIR TREATMENT OF RHEUMATISM.

An interesting article appears in the London *Lancet* of August 29, 1896, by W. Knowsley Sibley, on local hot-air treatment in rheumatism and allied affections.

The following is a brief summary of the article: In the first place, he makes note of the treatment of rheumatism by external applications, such as blisters, cupping, hot sand, etc. The only advantage that he claims for dry heat over moist is that a very high temperature can be got without scalding the patient. Moist heat at 115° to 120° F. is unbearable, and much above this scalds, but with the dry air 200° to 300° of heat can be applied without hurting the patient.

The apparatus used consists of a copper chamber, generally cylindrical, of various sizes and shapes, so that the hand, elbow, foot, knee, etc., may be inserted and treated locally.

The temperature is indicated by a thermometer, and can be regulated at will. The difficulties of suspending or resting the part during treatment have been met by an arrangement of asbestos which in no way interferes with the free circulation in the limb or of the superheated dry air around. The patient, suitably clad in flannel, whether seated on a chair or lying in bed, suffers no discomfort from the high temperature.

Treatment lasts from fifty minutes to one hour. It is to this prolonged application that Mr. Sibley attributes almost solely the

therapeutic effect. He starts with a temperature of 150° F., gradually increasing it to the desired point, and "a general free perspiration breaks out over the whole body ; at the same time the body temperature is temporarily raised from a half to three degrees, a physiological effect hitherto regarded as impossible to be obtained. Also the pulse increases in frequency, and to a less marked extent the respiration. A few minutes after the operation is completed the pulse, respiration, and temperature return to the normal or previous condition. Usually about an hour after the pulse is found to be slower and stronger than it was before treatment ; this was especially noticed in some cases of weak and enfeebled hearts. In cases accompanied with much pain this is almost at once relieved, and under the influence of the heat the parts soon become more lax and supple. When the limb is first removed there is often a transient erythematous blush. After the bath the whole body is briskly and lightly rubbed down with a dry towel and the limb sometimes gently massaged with olive or other oil. The patient then waits until quite cool before going out of the room in order to avoid the risk of a chill.

"It will be seen that this method differs materially in the following points from a Turkish bath : (1) The temperature is higher. (2) The application of this temperature is continuous for nearly or quite an hour. (3) The patient breathes the air of the room, and not that of the heated chamber. (4) The application of the heat is only local, the most affected part being treated. It may here be remarked that this local treatment has a general effect, and it is evidenced by the result that, although the particular part treated receives the greatest benefit, other parts of the body affected, but not actually immersed in the chamber, also much improve both with regard to pain and to increase of movement. (5) The treatment does not tend to produce cardiac expression even in the very feeble, or those conditions of exhaustion which are in some cases apt to occur when heat is applied to the whole surface of the body and at the same time inspired. A Turkish bath is less stimulating in its effects, and this local treatment may be confidently recommended in cases in which the former would be quite out of the question. (6) The portable character of the apparatus enables it to be taken to the sick-room and used by the bedside in cases where it would be impossible to move the patient. (7) The local bath gives far more successful results as a method of treatment."

Thirteen cases altogether are recorded—of these three are cases of arthritis deformans, two of subacute articular rheumatism, four of chronic rheumatism, two of sciatica, one of sciatica with lumbago, and one of neuralgia after herpes.

Two of his cases may be cited by way of illustration of the treatment :

CASE 1 was a case of arthritis deformans of four and one-half years' duration. Occupation of patient was dressmaker. Fingers were badly affected. Between August 4, 1894, and July 2, 1896, she had twenty baths. She can now use her needle at her occupation, which she had been unable to do for many months. There had been no recurrence up to August 29, 1896, and she has been steadily at work since August, 1894.

CASE 6 was one of chronic rheumatism of ten years' duration. Between July 20 and 29 she had four baths. Patient reported herself well on July 30; can now walk, which she has been unable to do for many years, on account of contraction of the toes.

The author states that these thirteen cases were not chosen ones, but are given in the order in which they occurred. The shortest was of ten days' duration and the longest of thirty years.

The results of these cases are as follows: Eight are cures, *i.e.*, have remained free up to the time of this article; two showed slight improvement, one showed improvement, one was lost track of, but improving, one still under treatment and improving.

With regard to the physiology of the processes, Sibley remarks: "Locally—(1) The heat produces dilatation of all the cutaneous vessels and free circulation through the parts—it is impossible to say how deeply into the tissues this extends, but from the results it may be judged to be some distance—and at the same time there is a marked stimulation of the nutrition of the cutaneous nerves; (2) there is free perspiration of an acid sweat; and (3) relief from pain, however produced, is almost at once apparent. Generally—(1) There is profuse perspiration and dilatation of vessels; (2) increase of the rate of the pulse and force of the heart's action; (3) increase (slight) of the respiratory movements; and (4) an increase in the body temperature often of two or three degrees Fahrenheit. The treatment appears to lower the blood pressure of the body, and in some way to increase the alkalinity of the blood, which enables it to dissolve the uric acid from the tissues and joints and get rid of this substance through the various excretory organs. This is evidenced by the relief from local pain and the removal of the frequent uric acid nerve depression. Hence the treatment is of a tonic nature and bestows an increased general vitality upon the patient."

By way of criticism of this paper, we might remark that the longest that any of these cases has been free from treatment is hardly three months, but we hope to hear again from Dr. Sibley,

when, we think, his statistics will be of more value. Bearing in mind the pathology of arthritis deformans and chronic articular rheumatism, and the changes in the bone and cartilage, we fail to see how any such treatment as this can *cure* such cases.

J.G.C.

CAN PERFECT BLOOD BE BORROWED FOR MAN?

In "An Address on Hæmotherapy," Dr. T. J. Biggs, of New York, at the annual meeting of the American Association of Physicians and Surgeons in Buffalo, June 23rd, 1896, arrives at the following conclusions :

(1) That bovine blood under practicable conditions can retain its corpuscular vitality and reparative power indefinitely, for direct operation in the veins, organs, and tissues of other beings needing such supply ; (2) that this power is available to the human system or any part of it, debilitated, injured, or morbid, by any or every mode of access, either by alimentary or rectal absorbents, by subcutaneous injection, or by outside application to denuded tissues ; and that with even *more* effect (doubtless from more robust quality) than is exhibited by the natural blood of average-healthy individuals in the repair of lesions ; (3) that it has a power, as yet mysterious and unexplained, when topically applied, to abolish the most excruciating pain ; (4) that whether injected or ingested it almost perfectly supplies the place of natural blood to every intent and purpose thereof in conditions of debility, anæmia, exhaustion or collapse from hæmorrhage ; (5) That its vital cells (microscopically shown perfect and unchanged from those in the living animal) enter into the wasting tissues of the patient in the same way, and with the same supply of living plasma for repair as in the ordinary natural sustentation of the system ; (6) that these cells possess and exert not only the reparative, but also the defensive power as against infection by microbes and other intruders into the blood, that has been demonstrated in the natural circulation, and that accounts for the resistance of healthy men generally to the assaults of disease ; (7) by at least plausible speculation that this mode of reinforcing vitality generally and locally, and antagonizing morbid products and morbid agencies, may yet open up to the conquest of the most formidable plagues and malignant growths—against which it has already made very significant advances.

CONTRA-INDICATIONS TO THE SALICYLIC TREATMENT OF ACUTE
ARTICULAR RHEUMATISM.

Professor Jaccoud at a recent clinical lecture at the Pitié Hospital, Paris, (*Medical Week*, Dec. 4, 1896), laid great stress upon the danger of using salicylic acid in acute rheumatism if visceral complications exist. It is therefore of great importance to determine whether there is endocarditis or pulmonary or cerebral complication. The presence of a murmur does not justify the diagnosis of endocarditis as it may be due to anæmia or other causes. If the valvular sounds are clear and their intensity is normal, the first sound not being in the least masked by the systolic murmur present, and if there is neither irregularity nor marked exaggeration in frequency of the heart beats it is not probable that there is endocarditis, especially if no thrill is perceived on palpation. The complete absence of any palpation symptoms would be astonishing in a case of generalized endocarditis. Cardiac complications usually make their appearance toward the middle of the second week, and supervene earlier only in cases of generalized polyarticular rheumatism characterized by excessive swelling of the joints, severe pain, and especially by the co-existence of very high fever. It is exceptional for them to exist from the onset of the affection. The presence of endocarditis constitutes a contra-indication to the treatment by salicylates.

In very acute cases of rheumatism in which a cardiac complication exists from the first, pleurisy or pneumonia may supervene simultaneously, or even precede the cardiac symptoms. In such cases the temperature is very high, the articular phenomena particularly severe, and the patient is in imminent danger. The affection is then fitly described as "visceral rheumatism." When visceral phenomena supervene later, the situation is less grave. Sometimes also cerebral phenomena appear, such as hallucinations, headache, and more or less violent delirium. Prompt action is called for but sodium salicylate must not be prescribed, for its use would be dangerous and might even cause the death of the patient. It exerts a curative action only on the articular manifestations of acute rheumatism, but has no effect on the visceral complications. Indeed, the aggravation of the visceral phenomena is often in direct ratio with the improvement observed in the joints.

In such cases we should administer, instead of salicylates, strong doses of tartar-emetic thus procuring diarrhoea and vomiting. Generally speaking, the temperature falls within a day after its administration; sometimes it rises on the second day, but this rise should not

cause any alarm, for on the third day the fever subsides permanently. This treatment has invariably enabled him to prevent pericarditis, when it existed, from progressing as far as effusion, and with it he has never met with any cerebral symptoms among his patients. He therefore advises, in all cases of early or late visceral complications in the course of acute articular rheumatism, not to administer sodium salicylate, but to have recourse to treatment by tartar-emetic, and combats the view held by some that the salicylates tend to prevent visceral phenomena.

A CASE OF INFANTILE OVERGROWTH, WITH ENLARGEMENT OF THE TESTICLE.

A child of nine and half years presented an excessive development both as to his size and muscular power.

His height was four feet ten inches ; chest measurement twenty-nine and half inches. He weighed forty-four kilogr, (ninety-six pounds), and could carry on his shoulders a hundredweight.

The hairy system was very much developed ; beard, hair in the axillæ, on the pubes, on the chest, and on the limbs. The penis was that of a young man ; erections frequent and strong with vigorous sexual passions. The voice was manlike, more than average intelligence, his character was good, and he was easily managed, and thoughtful. No functional anomaly.

This excessive growth commenced when he was five years old.

At the same time the left testicle acquired an enormous size, it was ten centimetres in diameter. The right testicle was atrophied, orchidectomy was performed on the left side. The operation was very successful. There was found in the testicle an epithelial growth, and coccidia. In one month after the operation there were observed the following changes in the young patient : the hair on the face, chest, and limbs fell out. The voice became infantile : his character and moral behavior became changed. Four months later the beard had completely fallen out and was replaced by a fine blond-colored down.

The pubic hair also disappeared, and the voice was shrill.

The penis diminished in size, while the right testicle became larger. Erections were more frequent, and sexual appetite increased. His intelligence also became diminished, and especially his muscular power

According to M. Lacchi, the *pedomicrosomia* was in this case dependent upon the testicular change. As a result of the parasitic stimulation, the function of the gland increased as its size increased, and it exercised (probably as a result of the increased secretion) an abnormal influence on the bodily development—E. Lacchi in *Siv. Reprn. di Freniatria.*, Vol. xxi., I., 1895, p. 149.—*Revue Internationale.*
J.G.C.

FALSE TUMORS OF THE ABDOMEN.

In diagnosis one has often to suspect abdominal growths. But amongst the mistakes likely to be made, there are none perhaps more frequent than those which are caused by false abdominal tumors.

These tumors may be caused in various ways. A hard and distended bladder has been mistaken for a new growth of the true pelvis. The gall bladder may in certain cases be greatly distended. Hydronephrosis may also lead to an error in diagnosis. The same may be said of the stomach or intestine distended by their contents.

More frequent are the tumors caused by the displacement of other viscera; a displaced kidney is generally recognized, but not always so; a floating kidney can resemble a small tumor of the liver, and this be confounded with an hydatid cyst or a distended gall bladder. An enlarged spleen reaching below the costal margin is the most easily recognized tumor. Pressure of corsets can notably compress the liver at the costal margin to the extent of detaching a part of it, which then forms a mobile tumor. There are also false pregnancies, of which we have number of examples, and which terminate without the expulsion of a foetus.

At these observations let us appreciate the errors or the illusions which may arise from the presence of false tumors; they suffice to show us of how great importance it is to be aware of their existence, and be able to diagnose them.—Potain, in *Le Semaine médicale*, May 27, 1896.
J.G.C.

ATTEMPTS AT TREATMENT OF ACUTE ARTICULAR RHEUMATISM BY SERUM-THERAPY.

M. Weiss, assistant to M. Drasche, professor of medicine at Vienna, has observed, while assisting the latter gentleman at the general hospital, ten cases of acute polyarthritic rheumatism treated by injections of blood serum from subjects who had recently suffered from an attack of acute articular rheumatism.—*Revue Internationale.*

This serum, obtained by bleeding, was first of all sterilized, then injected in doses varying from 6 to 10 grammes; in the case of two patients only the quantity injected was eighteen in one case and twenty grammes in another. Altogether twenty-two injections were given. In the greater number of cases there was noticed a temporary decrease in the swelling, and in the pain in the affected joints, a result which might be accomplished within a few hours, or it might be on the following day only, and which was often accompanied by a lowering of temperature of from one to one and one-half degrees.

On the other hand, in certain other patients the injections did not exercise any therapeutic action, and in three cases they increased the symptoms. In one of these latter cases it began at first as a subacute case with drowsiness, and immediately after the injection it became a well-marked case of polyarticular rheumatism.—*Revue International*.
J.G.C.

CHARCOT-LEYDEN CRYSTALS AND BRONCHIAL ASTHMA.

Montessori shows that the Charcot-Leyden crystals are always found in cases of chronic bronchitis, but they are of very small size and hard to find. In the paroxysm of asthma these crystals are of very large size, and are the result of the massing of similar smaller crystals.—*Revue International*.
J.G.C.

TREATMENT OF GASTRIC CRISES IN TABETICS.

The author reports two cases of gastric crises in tabetics, treated successfully by oxalate of cerium, which has been employed for the last twenty-five years by English physicians in dyspepsia, cramps of the stomach, vomiting, diarrhoea, etc.

In the case of the two tabetics, the oxalate of cerium in the form of cachets of from 5-15 centigrammes, four cachets daily, lessened considerably the duration of the crisis, diminished the number of the attacks, relieved the pain, stopped the vomiting, and allowed the patient to take food.—P. Ostankow, in *Therapeut. Wochenschr.*, 1896, No. 25.
J.G.C.

OBSTETRICS

IN CHARGE OF

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WALCHER'S POSITION IN PARTURITION.

M. E. Fothergill, of Edinburgh, in the *British Medical Journal* of October 31, 1896, says that Walcher's position—the *Walchersche Hengelage*—was first described by Walcher in 1889 in a short article in the *Centralblatt für Gynecologie*. By placing the parturient patient in the lithotomy posture, and then allowing the legs to hang freely down so that the feet do not touch the floor, the true conjugate is increased about one centimetre ; this statement has been proved by numerous observers abroad, and the posture is now in use as a matter of routine in several German hospitals. It is employed in all high forceps operations, in extractions after turning, and after perforation of the head. Fothergill has found the posture extremely useful in several cases, which are briefly noted.

In posing the patient, all that is necessary is to see that the buttocks are quite at the edge of the bed or table used, and high enough to allow of the feet hanging clear of the floor ; pillows may be placed under the buttocks if the bed is low. There is a tendency to pull the patient off the bed ; but she may be held by the anæsthetist, or bands may be passed under her arms and fastened to the bed or table legs so as to hold her in position. In this posture the axis of the pelvic brim presents downwards at an angle of about forty degrees ; therefore in order to exert traction in the proper direction with forceps, the operator must sit on a low stool, or on a cushion placed on the floor.

In high forceps cases, and after perforation, the position saves (1) the strength of the operator ; (2) pressure on the head ; (3) pressure on the symphysis ; (4) pressure on the perinæum by for-

ceps. In cases of difficulty at the brim not needing forceps, and in breech cases, the position saves (1) exertion to the uterus and abdominal muscles; (2) pressure on the head; (3) pressure on the pubic symphysis. In all cases, with or without forceps, where the perinæum is in danger, extension of the legs at the hips is of advantage in relaxing the integument and subjacent structures at the vulvar orifice.—*Therapeutic Gazette*.

MIDWIFERY.

For the last twenty years it has been taught that any serious hæmorrhage occurring during the later months of pregnancy was due to a partial separation of the placenta. Budin (*La Presse Médicale*, No. 64, 1896) relates the history of two cases of ante-partum hæmorrhage in which the blood came from a rupture in the circular sinus of the placenta. In neither case was the placenta situated in the lower uterine segment, nor was there any reason to believe as the result of careful examination of the surface that any separation had occurred before the child was expelled. A black clot in each instance was traced directly up to and into the interior of the ruptured circular sinus. The possibility of *ante-partum* hæmorrhage being sometimes due to this accident had formerly been suggested by Jacquemier and Matthews Duncan, but no clinical facts were brought forward to support the hypothesis until quite lately. At the present moment there are twenty-two cases on record of hæmorrhage due to the rupture of the circular sinus. It must be remembered that the so-called circular sinus of the placenta is situated at the periphery of the placenta, and does not generally form a complete circle, but is interrupted at various points. In calibre it is about equal to the little finger, but in some cases it is imperfectly developed. The walls of the sinus are very thin, which may explain the fact that rupture sometimes occurs. The blood may accumulate in the uterus between the membranes and the uterine wall, or it may escape externally—more often, perhaps, some escapes and some is retained. It is only after the labor is over and the placenta is examined that the cause of the hæmorrhage can be definitely ascertained. The prognosis and treatment is much the same as in cases of hæmorrhage due to partial detachment of a normally implanted placenta.

At the International Congress of Gynæcology held in Geneva, one of the subjects under discussion was the treatment of puerperal eclampsia. Until the pathogeny of eclampsia is better understood no rational treatment of the disease is possible, and it is more than

probable that causes at work are not always the same. According to the statistics of Dr. N. Charles, of Liége, eclampsia occurs once in every one hundred and fifty-one deliveries, and is about four times as common in primiparæ as it is in multiparæ. Among every four women who suffer from albuminuria during pregnancy, one gets eclampsia. He teaches that it is most desirable to terminate delivery in all cases as speedily as possible when eclamptic convulsions set in, and, with this object in view, labor should be induced or accelerated as the case may be. In urgent cases the cervix must be dilated by the hand, or by hydrostatic bags, and if this is impossible, Cæsarean section should be performed.

Charpentier (Paris) on the other hand counsels that we should wait for labor to come on of itself, and that delivery should be allowed to take place spontaneously whenever possible, forced delivery being reserved for very exceptional cases. Venesection and the administration of chloral and chloroform are the remedies he chiefly relies on during the attack, and further suggests that diuresis may be favored by the subcutaneous injection of artificial serum. Veit (Leydon) draws attention to the fact that many cases of eclampsia get well whatever the treatment may be, and states that there is no direct evidence that forced delivery under deep anæsthesia improves the prognosis. He does not rely on any one method of treatment, but considers that the systematic use of large doses of morphia administered subcutaneously seems to give the best results. In addition he advises that the membranes should be ruptured, labor prudently accelerated, and delivery effected as soon as the soft parts are fully dilated. Mangiagalli on the other hand advocates rapid evacuation of the uterus, and believes this to be the most important point in the treatment. If the case is a grave one the cervix should be forcibly dilated, and when this is impossible on account of an unusual degree of rigidity, Cæsarean section is justifiable, especially if the fœtus is living. Byers (Belfast) pointed out that the most probable hypothesis was that the convulsions were caused by a poison elaborated by the mother, or by the fœtus, which accumulated in the blood owing to some failure in the normal processes of elimination. The treatment he advised was the administration of morphia subcutaneously, the woman being kept upon her side, and all liquids by the mouth being withheld. Hot water or vapour baths, obtainable, should be used. If labor has not begun, the convulsion should be treated with morphia, but the uterus should not be excited and no attempt should be made to bring on labor. In the first stage of labor, when convulsions supervene, hydrostatic bags may be

employed if the cervix is soft and dilatable ; but if it is rigid, no local measures should be used. In the second stage of labor he advises delivery with forceps after the patient has been first anæsthetised.

It will be seen that there is still no general agreement as to the best method of dealing with eclamptic convulsions, and Veit's remark that many cases get well, whatever the treatment may be, shows how difficult it is to judge dispassionately the merits and the demerits of the various plans adopted, and to determine to what extent they really play a part in bringing about the recovery of the patient. The most difficult question to decide is whether the first stage of labor should be hurried and delivery rapidly effected, as advised by Charles, or whether it should be allowed to take its course as recommended by Charpentier and Byers. It is quite clear that unless the advocates of forced delivery can prove that their results are much better than those in which labor has been allowed to advance naturally, their methods will not find favor, as the risk of severe local injury from forced delivery is a real one. Further evidence is wanted on this point, and it is only by reviewing a very large number of cases that the matter can be finally determined, because the severity and danger of death in different cases of eclampsia varies enormously. Some cases even where convulsions occur at short intervals get quite well, while others, after only a few or it may be a single convulsive attack, rapidly die, although the treatment adopted may be precisely the same in both instances. Until more certain knowledge has been obtained as to the precise pathology of these cases we cannot hope to advance very far towards a rational treatment.

It is a very remarkable circumstance how slowly any improvement, although a very real one, make its way in this country. It is not too much to say that the advantages of axis-traction forceps have been definitely proved by theoretical and practical demonstration, and yet the number of practitioners who use these instruments form but a very small proportion of the whole. Dr. Milne Murray, in a paper on "Forceps with Adjustable Axis-traction" (*Edinburgh Medical Journal*, September, 1896), describes a new modification of his well-known forceps which permits of traction in the pelvic axis being made with still greater scientific accuracy. He points out that the ordinary axis-traction forceps only allows of traction being made in the pelvic axis when the pelvis is normal, but that when the axis of the inlet is more vertical than usual, as in the justo-minor pelvis, or more horizontal than usual, as in the flat

pelvis, some of the force employed is lost unless provision be made to allow the line of traction to be varied to suit the requirements of the altered canal. Of course, in cases of abnormal pelvis, if ordinary forceps are used the line of traction is still more faulty than with axis-traction forceps, and in order to do away with this "angle of error" he has devised a pair of forceps which will permit the line of traction to be altered to suit any given case of pelvic deformity. The forceps is identical with those used in the ordinary axis-traction instrument, and the traction rods are jointed to it in the usual manner. These rods run down the back of the handles, and at a point half way down they turn backward at a right angle, forming two horizontal bars four and a half inches long, with graduations at half an inch apart. A perforated block with a handle attached by a joint is slid along these horizontal rods and can be fixed at any point by a screw. By means of a sector which moves with the handle that position of the block on the horizontal rods can be determined which is necessary in cases where the pelvic inclination is normal; but if the axis is more vertical than usual, the block is moved forward nearer to the handles, and if the axis is less vertical it is moved backward away from the handles. By this means we can ensure that in all cases the line of traction corresponds with the axis of the pelvis.

In the same paper Dr. Murray discusses the difficulties met with in dealing with persistent occipito-posterior cases, and describes a special form of axis-traction forceps which he has devised. To bring about anterior rotation it is necessary to increase the flexion of the head, which is imperfect, and at the same time to draw down the head so as to bring it on to the sloping floor of the pelvis. Forceps with the ordinary pelvic curve, whether axis-traction or not, when applied to the head in this position, tend to diminish rather than to increase the flexion, and at the same time are very liable to slip off. The only modification that is necessary to allow the forceps to secure a firm hold and increase flexion, while at the same time they permit of normal rotation, is to lessen the pelvic curve by one-half. In other respects the forceps is of the adjustable axis-traction variety. This form of instrument has proved highly successful in the hands of Dr. Murray.

Dr. Berry Hart, in a short but interesting paper on the nature and diagnosis of so-called fleshy mole (*British Medical Journal*, October 24, 1896), discusses the symptoms and pathology of this condition. By the term "fleshy mole" is meant "a form of abortion where part of the aborting ovum, usually at or about the second

month, is retained for many months, and ultimately discharged in a much altered condition." As is well known, the altered appearance depends chiefly on hæmorrhages between the chorion and decidua. Dr. Hart regards the condition as a rare one, but I think few gynæcologists who see many cases pass a year without encountering at least one example of this disease. The first factor in the production of a fleshy mole is the death of the fœtus, and this is followed by shrinking of the chorionic sac and blood extravasation among the villi—that is to say, between the chorion and decidua scrotina and reflexa. As the result of the hæmorrhages, numerous small, rounded protrusions are seen when the interior of the sac is examined. The fœtus may entirely disappear, or may be represented by a small shrunken remnant. In most cases moles of this kind are expelled within six months of conception, but in some cases they have been retained until the eleventh month ; but Dr. Hart has never met with any recorded case where retension has exceeded this period. The diagnosis of cases of this kind is not easy, and in some cases impossible.—*William J. Gon, M.D., in The Practitioner.*

GENITO-URINARY AND RECTAL SURGERY

IN CHARGE OF

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ARGONIN AND ITS PROPERTIES.

Argonin was first prepared in the Physiological Institute of the University of Breslau by Professor Dr. Rohmann and Dr. A. Liebrecht.

It is a silver-proteid compound, *i.e.*, a combination of the casein of milk with silver, in the form of a fine white powder which readily dissolves in water to an opalescent solution, on gently warming. This solution is characterized by not being precipitated by sodium chloride or by albuminous fluids.

In accord with these peculiar chemical qualities are various characteristics in the physiological action of Argonin, which distinguish it from silver nitrate, the salt so universally employed at present.

According to the bacteriological investigations of Dr. R. Meyer, Argonin is "a disinfectant of pronounced antiseptic properties." It completely destroys various bacteria, especially gonococci, even when the latter are present in albuminous fluids.

It possesses a marked advantage over silver nitrate in that it is non-irritating. As is well known, applications of silver nitrate to mucous membranes, such as that of the urethra, call forth irritation and frequently pain ; these latter symptoms do not follow the use of Argonin. Nevertheless this new non-irritating silver compound possesses all the anti-bacterial qualities that make it especially adapted to the treatment of gonorrhœa.

Its effectiveness has been thoroughly demonstrated during the last two years in the dermatological clinic of Jadassohn in Breslau. It is especially recommended in the treatment of acute gonorrhœa of the urethra anterior and posterior of man, of the female urethra and uterus.

NOTE.—We have during the past year used this preparation of silver in about one hundred cases and are more than pleased with the results obtained. We have not had occasion to rely on strength greater than 5 per cent., though. In the acute stage we have had the discharge almost stopped and the gonococcus disappear in from four to ten days with a corresponding short period of entire disappearance of the discharge. This we are satisfied with and have not been able to procure so favourable results from any other line of treatment. The silver salts have been favorites of ours for some years but the nitrate is a painful injection, it coagulated the albumen and was not satisfactory.

Argentamine is less painful ; it does not coagulate the albumen, but we did not find it stable. While in argonin or caseate of silver we had an injection without pain, that did not coagulate the albumen and was eminently satisfactory in all respects.

We are indebted to Prof. Liebrecht of Breslau for a substantial sample of this preparation to conduct our first series of experiments.

PÆDIATRICS AND ORTHOPÆDICS

IN CHARGE OF

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A NEW TREATMENT OF POTT'S CURVATURE.

Calot (*Sem. Méd.*, December 23, 1896) reports thirty-seven cases of Pott's disease, cured without deformity, by forcibly correcting the curve as soon as it appears. He believes that all cases can be treated in the same way and with a like result. The patient is put under an anæsthetic, while four assistants pull the upper and lower extremity of the spinal column backwards, and the surgeon exerts strong pressure on the convexity of the curve. When the spine has thus been straightened a plaster jacket reaching from the head to the pelvis is applied. If it is impossible to correct the curve by these means, the projecting spinal processes should be removed. Exceptionally, however (in two out of thirty-seven cases), the posterior wedge of bone which prevents the vertebral column from being straightened must be excised. Then, after cutting through the bone anterior to the spinal canal, the column can be replaced in its normal position. Only five to ten months are needed for a cure, instead of two to three years, as under the usual treatment, and the occurrence of paralysis is largely prevented. Calot showed five children before the Academy of Medicine whose humps, after existing for six months to six years, had been treated by his method. In some no trace, in others but very little, of the former deformity remained. Photographs taken before treatment showed how marked the difference was.

ANTISTREPTOCOCCIC SERUM IN SCARLET FEVER.

A report is published by Rappapart (*Bolnitschnaja Gaz.*, Bolnitschnaja, No. 40) of his experience with antistreptococcic serum, and his

results are compared with those of Bagnisky and Josias. Bagnisky, as the result of a trial of Marmorek's serum, came to the conclusion that further experiments were desirable. Josias found that it did not have any influence on the course of the disease, unless it were that the necrotic angina had disappeared more quickly and the lymphadenitis resolved. Rappapart experimented with the carbolyzed solution of the serum from the Imperial Institute, containing 0.5 per cent. of phenol. He injected the solution in sixteen cases of scarlatina, amongst which were ten with severe complications (cellulitis of the neck, catarrhal pneumonia, necrosis of the nose, uræmia, etc.). The serum, even when injected repeatedly, had no influence either on the temperature or on the complications; four of the patients died.

HÆMO-PERICARDIUM.

A very interesting case of hæmorrhage into the pericardium was reported by Mansell Moullin, at a recent meeting of the Clinical Society of London, and appears in *The British Medical Journal*, January 30, 1897.

This patient, a lad aged twenty, received a severe blow over the sternum, while playing football on March 28, 1896. He was able to go on playing for twenty minutes, but on arriving at his home he became profoundly collapsed. At nine p.m. on that day his pulse was fairly good, but the heart was apparently beating at about twice its usual rate. There was no increase of cardiac dullness, but there was some difficulty in swallowing and great pain on the left side. The breath sounds were very loud all over that side, and the temperature was 96°F. Thirty-six hours after the accident he was seized with a violent cough accompanied by profuse expectoration, and he perspired profusely. The pulse was 140 and the breathing 22 per minute. The area of cardiac dullness gradually increased until it spread to the right of the sternum. On April 22, three weeks after the accident, he was seized with violent dyspnoea, and then the whole of the left side of the chest was found to be distended and motionless. The heart sounds could only be heard in the right second interspace. He (the speaker) made an incision through the fifth left space, and exposed the pericardium, which was incised, and a drainage tube inserted. Altogether some six pints of blood escaped through the tube within the first three hours, and this clotted firmly in the basin. The dyspnoea at once disappeared, the tube was removed on the following day, and the patient was able

to sit up in a week. The left lung remained collapsed for a long time. The patient had recently returned to his duties as a postman, and had resumed football.

PAROXYSMAL TACHYCARDIA IN A CHILD.

A case of paroxysmal tachycardia in a little girl of eleven years is reported in the London Clinical Society proceedings (*British Medical Journal*, January 16, 1897) by W. B. Herringham. The child was under observation from June, 1896, to September, 1896, and during that time had seven attacks. The history showed that she had been subject to similar attacks for at least five years. The paroxysms began suddenly without any adequate cause. They lasted for a period which varied from thirty-six hours to thirteen days, and the end of the paroxysm took place during sleep. During the attack the pulse was very small and soft, uncountable at the wrist, of a rate which, taken at the heart, was from 240 to 260; the heart was somewhat dilated beyond its usual size, and the pulsation was very forcible. It was at first productive of some præcordial distress, but not of acute pain. Respiration was rapid, and there was occasionally a little cyanosis, but no sign of pulmonary oedema. There was no anasarca of the legs. The urine during the attack was very scanty, owing doubtless to the low blood pressure. During the paroxysm sleep was restless, and did not alter the cardiac rate. Since the attacks ended during the night the actual moment of change was never witnessed, and it could not, therefore, be told whether this was instantaneous or a matter of hours. The pulse, which had been over 260 the night before, was found in the morning to be 90 or thereabouts, and the child professed herself quite well. The causes which excited the attack appeared to be either sudden effort or sudden movement, yet neither of a degree likely to produce any ill-effect upon ordinary persons. No valvular disease could be detected, nor was there any history of rheumatism in the child or in her family. There was no sign or history of syphilis, and the patient before the attacks was a big, plump, rosy girl, the picture of health. The heart, however, was permanently enlarged, and the writer suggested that there might be adherent pericardium, and that the myocardium itself might as the result of some former disease be unhealthy. From a study of the literature of the subject, and from watching the present case, he was disinclined to believe that these hearts were structurally healthy, and he thought that the change in them might originate in three ways. In some cases it might be due

to acute myocarditis, as in those which had been seen in rheumatic people; in others it might be due to degeneration of the muscle itself, either syphilitic, as probably in two of the recorded necropsies, or fibrotic, whilst in a third class it might be primarily due to nerve degeneration, as, in some cases, noted after infectious fevers. Various modes of treatment were adopted, digitalis, nitrite of amyl, atropine in large doses, pressure upon the vagus nerve, treatment of the stomach and intestines, had all proved useless, or if one had at one time seemed to cure it failed to repeat the performance. Schott's treatment (baths and exercises) neither reduced the size of the heart, nor prevented the occurrence of the paroxysm.

HOW TO STOP THE INFLAMMATION FROM VACCINATION WHEN RUNNING TO EXCESS.

The *British Medical Journal*, January 30, contains a communication from Clement Lucas, F.R.C.S., directing attention to the importance of preventing excessive inflammation in connection with vaccination, and describing a plan of treatment which will completely check the inflammatory process. Cases where there is much local reaction are seized upon by those opposed to vaccination and much capital is made out of them. The author directs that, in the event of the pustules tending to become confluent on the twelfth or fourteenth day and the inflammatory zone to spread with perhaps enlargement of the axillary glands and œdema of the arm, the area of the pustules should be powdered over with iodoform and a sterilized dry pad be applied to keep the powder in position and the pustules from irritation. The process is controlled in twenty-four hours. The pustules dry into a cake, the redness subsides, the glands decrease, and the œdema of the arm rapidly disappears. This treatment the author considers in every way preferable to hot fomentations or antiseptic moist applications.

TREATMENT OF INFANTILE BRONCHO-PNEUMONIA.

The success obtained by cold water applications in the treatment of infectious diseases of children, and especially of bronchó-pneumonia, is becoming daily so accentuated that the method has gained the favor of the most enlightened amongst practitioners, and is well received by the public. Dr. Albert has just published a new series of cases which cannot fail to convince the most sceptic, and to give courage to the most timid. In succinct detail he describes the *modus operandi*, which is as follows: The child is stripped to the

waist, and a piece of gauze (tarlatan) folded in six or eight doubles, and so cut that it reaches from the clavicles to the umbilicus in front and to the sacrum behind, and wide enough to overlap in front, is steeped in hot water, so as to remove as much of the starch as possible, and when properly wrung out it is plunged again into cold water (the temperature of the room). The gauze is then squeezed as much as possible, and applied around the thorax and the upper portion of the abdomen ; a piece of oil-silk of the same size is placed over this so as to prevent evaporation. The child is then dressed and put to bed. At the end of half an hour the application is renewed, and so on as long as the symptoms (temperature over 100° , with vesperal exacerbation, agitation, quick-breathing, etc.) require it.

There exists no contraindication that these wet compresses should be always tried.

According, however, to the thèse of a distinguished pupil of Prof. Lemoine, of Lille, this latter prefers in his practice warm bathing in the treatment of the same affections, asserting to have derived from it greater advantages than from the method above described.

The temperature of the baths should oscillate between 97° and 100° , the child being plunged in it up to the neck. To avoid congestion of the face and brain, cold applications are applied to the head. The bath lasts ten minutes, and before putting the child into it a spoonful of some stimulating mixture is given. When taken out the patient is rapidly dried and wrapped in flannel. The treatment may be renewed twice or three times daily.

Mustard baths are ordered where the condition of the patient causes grave anxiety ; about a quarter of a pound of ordinary coarse mustard is blended with a little cold water at the bottom of the bath and the hot water added.

These baths are always indicated in broncho-pneumonia, and pneumonia as well as capillary bronchitis. The effect of these baths on the child is most favorable ; the respiration becomes more tranquil, the pulse less rapid, and most beneficial sleep intervenes.

Prof. Lemoine affirms to have thus treated thirty-three cases of broncho-pneumonia without losing one patient.—*Medical Press.*

PSYCHIATRY AND NEUROLOGY

IN CHARGE OF

R. W. BRUCE SMITH, M.D.,

Resident Physician at Orchard House, Asylum for Insane,
HAMILTON.

THE ABUSE OF NERVOUS STIMULANTS.

The *Therapeutic Gazette* in an editorial calls attention to the fact that both the medical profession and the laity have been accustomed to the use of alcohol as a nervous stimulant. This excessive use has hardened some to its evil effects, while others go to the opposite extreme in condemning it. There is an ever-increasing number of substitutes for alcohol thrown upon the market, such as coca, kola, etc. Many of these substitutes contain a large amount of alcohol and the consumers of them become addicted to the alcoholic habit without being aware of the fact. The temporary changes for the better which the consumer notes after a dose of his favorite remedy are usually due to the alcohol, it contains. We are accustomed to consider the wide-spread use of nerve stimulants to the rush and pressure of modern life, but history shows that for many hundred of years nerve stimulants have been used and abused much as they are to-day. The abuse of these remedies by the profession is rather the result of carelessness than of ignorance. They should be used only as temporary make-shifts, as in the vast majority of cases they materially increase the discomfort and ill-health of the patient. All the so-called "strengthening remedies," which enable a man to accomplish more work when he is under their influence, do this, not by adding units of force to his body, but by utilizing those units which he has already obtained and stored away as reserve forces. The result will be the same as in the case of a banker who draws upon his capital or reserve funds to supplement the money with which he, if properly employed, can carry on his business. The result is in the latter case a pecuniary, and in the former a nervous bankrupt.

MENSTRUATION IN ITS RELATION TO INSANITY.

Dr. E. H. Howard, Superintendent Rochester, N.Y., State Hospital for Insane, says in *Hospitals Bulletin* that the menstrual record at a State hospital, being based upon correct data and personal observation, presents exceptional opportunity for reliable deductions. He concludes that a careful tabulation and study of the forms of insanity from which the total number of patients have suffered, fails to elicit any facts which seem to ascribe any particular form of mental disease with a causative relation to abnormalities of the menstrual function. In a general way, it is proper to state that during the acute stages of all forms of insanity the regularity of the menstrual functions is impaired, and in many cases of acute mania cessation is concomitant with the mental disease. Reference is not made to those cases in which insanity is caused (?) by cessation of the menses. When the irregularities of menstruation occur in the course of the mental disease, in a similar manner to which they may occur in many other diseases, regularity often returns without being accompanied by the restoration of mental disease.

SULPHONAL AS A SEDATIVE.

Dr. A. W. Hurd, in the *State Hospitals Bulletin*, furnishes interesting notes on the use of sulphonal in Buffalo State Hospital. A group of twelve cases were selected, all of whom were women who were showing and had exhibited for a considerable period marked mental and physical disturbance; those few, in fact, who by their excitement, disturbance, and tendency to noisiness were sufficient to render the disturbed wards at times noisy and uncomfortable for others; they being cases which had largely resisted other means of control and had not responded, either in the matter of quietness or sleep, to the means ordinarily used. The method was simply the administration of a moderate dose of sulphonal *each morning* before breakfast. The dose used was from 20 to 30 grains; was given at 6.30 in the morning, always in a hot solution, and was followed by no other administration of this nature whatever till the following morning. The effect was a sedative one throughout the day, but not sleep; in addition, however, these patients as a rule slept well the following night without another administration of any drug. The slow action of sulphonal is well exemplified in this; that its hypnotic effect was not manifested till the evening of the day of administration while the patients were rendered comfortable during

the daylight hours. The effect in general was to check activity, excitement, and physical waste, giving a much better chance for repair and nutrition. No untoward effects whatever were observed, the condition of the patient being under observation continually. The administration in none of the cases extended over a month continuously, and in the cases of acute mania the necessity for it was past before the expiration of that length of time.

NEURASTHENIA.

Dr. Neff summarizes his paper in the *Physician and Surgeon* as follows: (1) Neurasthenia is a nervous disease having distinctive features and well-marked diagnostic signs. (2) Neurasthenia may be the outcome of various other functional and organic affections; therefore it is divisible into two forms—(a) simple neurasthenia and (b) symptomatic neurasthenia. (3) The symptoms of neurasthenia are dependent on nervous exhaustion. Experimental physiology would indicate that this is coincident with changes in the nerve cell induced by fatigue. (4) The etiology of neurasthenia is divided into predisposing and exciting elements. In the former, heredity has an important role, the prominent exciting cause in the latter being fatigue. (5) The prognosis in the uncomplicated form is good. In the so-called “degenerative form” and in elderly persons relapses are frequent. (6) The treatment of neurasthenia has as an essential feature the employment of rest in some form, associated in some cases with dietetic, electric, and hydropathic treatment, and the use of appropriate drugs to combat symptoms.

BULLETS IN THE BRAIN REVEALED BY “X” RAYS.

Dr. Willy Meyer presented at a recent meeting of the surgical section of the New York Academy of Medicine a patient, a young man, who had attempted suicide by shooting himself in the right temporal region. He was taken to a hospital, where he was trephined and the depressed bone was raised. Motor symptoms manifested themselves in the left arm and leg, pointing to an injury in the motor area in the right hemisphere. Dr. Meyer saw him and attempted to have X-ray photographs taken, and succeeded, by using both side and front exposure, in revealing three spots on a line with one another, one of them on the left side of the brain, two of them supposed to be a divided bullet or two bullets, and the third a splinter of bone. Possibly the third was also lead. Their removal was

regarded as impracticable, and nothing further was done. An interesting feature in the case was the falling out of the hair on the left posterior fourth of the head as result of exposure to the X-ray.

EXCRETION OF URIC ACID IN EPILEPSY AND THE EFFECTS OF DIET AND DRUGS ON THE FITS.

Dr. A. Haig in *Brain* argues that there is a causal relation between uric acid and epilepsy. The fits of epilepsy, he asserts, bear an extremely close relationship to the uric acid headache (migraine), and like this are probably functional disorders due to altered circulation in the brain. The headache is controlled with almost absolute certainty by a diet which frees the blood from excess of uric acid. Dr. McEnroe, in the *Medical Record*, also urges that diet is of great importance in the treatment of epilepsy. The pyloric sphincter of the stomach is often greatly relaxed and the food passes rapidly into the small intestines, which are also relaxed. This may account for the ravenous appetite of epileptics, so that they bolt their food down without proper mastication. Animal food aggravates this condition and should not be taken. The patient should take at least three-quarters of an hour for each meal. If meat is allowed at all it should be taken in the morning and never at night. The bromides of potassium and sodium owe their efficacy to the fact that they paralyze those peripheral irritations which cause the convulsions and other manifestations. Great care must be exercised in the use of the bromides, for these drugs can diminish the normal excitability of the body. If given in excess they impoverish the blood, producing a tendency to extravasations, and cause an acne-like eruption on the face. The patient becomes sluggish in his movements and has loss of memory. They should always be given largely diluted with water, and always after taking food. Cod liver oil is a powerful adjuvant in the treatment of epilepsy. It offsets the injurious effects of the bromides, and may be combined with small doses of phosphorus about one one-hundredth grain for each dose. If the acne is very severe from continuous use of the bromides Fowler's solution of arsenic in five-drop doses is very effective. The compound spirit of ether in drachm doses is very useful when the attacks are always nocturnal. Many cases of *le grand mal* are greatly improved when the strictest rules of diet are observed and particular attention is paid to keeping the intestinal canal in an aseptic condition by the occasional use of cathartics, salol, etc. The manifestations of *le petit mal* are not so readily controlled.

Epilepsy is sometimes due to an intracranial cause manifested by fibrillary twitching of the facial muscles during the night. Corrosive sublimate in one-twenty-fourth grain doses should be given three times per day. The convulsive attack, if taken in time, can often be prevented by producing some powerful impression on the surface of the body, such as a sharp slap. For the excessive irritability of the skin the application of capsicum liniment is recommended.

HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

WILLIAM OLDRIGHT, M.A., M.D. Tor.,

Professor of Hygiene in the University of Toronto ; Surgeon to St. Michael's Hospital

THE CLIMATIC THERAPY OF PULMONARY PHTHISIS.

By **J. FRANK McCONNELL, M.B., (TOR.)**

LAS CRUCES, NEW MEXICO.

Late House Surgeon of St. Michael's Hospital, Toronto.

The effects of climate are so frequently referred to in medical writings and the term so often used in a comprehensive sense, that it may be well to consider what the science of climate really is. According to Dr. Julius Hann the definition of climate may be summed up as "habitual weather." Thus what we mean by the climate of a particular place is the prevailing and characteristic weather of that place. The meteorological phenomena characterizing any locality are in their turn dependent upon altitude, moisture, latitude, prevailing winds, soil, and topographical peculiarities of the neighborhood. The resultant of these facts constitutes climate, which, therefore is synonymous with the prevalent weather of a place. From meteorological tables, geographical and other data, a general opinion can be derived as to the nature of the climate and whether it is favorable or unfavorable to health. In most cases, however, it is found that there are strictly local conditions which may seriously affect the salubrity of a particular resort, such as too much shade, bad drainage, poor water, malaria, etc., which should enter into consideration in determining whether a given locality is or is not the best place to send a special case, which can only be ascertained by a personal examination by disinterested parties, I would therefore call attention to the responsibility assumed by a physician in sending a patient a long distance from home, merely with a vague idea of the benefit to be derived from a change, without precise knowledge of the place or accommodations which the patient will find during

his journey, or at his destination. In the climatic treatment of pulmonary phthisis, a leading medical work of the day points out, that there are three essential features in the ideal climate, viz. : Pure air, equable temperature, maximum amount of sunshine : we therefore see in this consideration that altitude and atmospheric dryness are not viewed as essentials. In my opinion dryness is not only an "useful adjunct" but a most important factor in the climate cure. "Tubercle cannot live without moisture," (Baumgarten) a moist air therefore nourishes, a dry air tends to destroy it. The breathing of pure, dry air, not by fits and starts, but constantly, constitutes what we desire. In regard to altitude, the physician must decide in each case as to suitability, as much depends upon the physical condition of the patient. It is commonly known that there is established a certain immunity from phthisis in mountainous districts. The geographical and climatic conditions as found here in Las Cruces may be taken as a type of Southern New Mexico, one of the districts which in my opinion ranks first in providing the requisites of a suitable climate for pulmonary troubles. Las Cruces is situated in the lower valley of the Rio Grande, being completely surrounded by mountains, distant on all sides about fifteen miles. The elevation is approximately 3800 feet. As it is a part of the arid belt, dryness is assured, there being no winter rains. The days are nearly all sunny and outside of the town, among the alfalfa fields, there is practically no dust. In summer the thermometer seldom reaches 110 degrees Fahrenheit, which must be considered as dry heat. The mountains afford a cool retreat. The heat is in no case as extreme as in Arizona, and sunstroke is unknown, the humid atmosphere at 85 degrees in the East seems less desirable. Of course, for those who can afford to travel, Colorado, or Northern New Mexico present pleasant, cool summer resorts. Sante Fe, New Mexico, being the coolest summer meteorological station in the United States.

NOTE.—Dr. McConnel writes us that he will be glad to give attention to communications from physicians relative to the suitability of climate, accommodations, etc.

Editorials.

BRITISH MEDICAL ASSOCIATION.

IN our last issue we referred to the meeting of the council of the British Medical Association, held in London, January 20. Many matters connected with the Montreal meeting were carefully considered. We had hoped to receive a complete list of those appointed as readers of addresses, and as presidents of sections, in time for insertion in this issue; but it has not reached us yet. This much, however, we can say, that the council at home has decided that there shall be eleven sections: Medicine, Surgery, Gynæcology and Obstetrics, Anatomy and Physiology, Pathology and Bacteriology, Pharmacology and Therapeutics, Public or State Medicine, Psychology, Laryngology and Otology, and Dermatology, and that the list of presidents of these various sections will comprise the names of a greater number of distinguished men than has been the case at any previous meetings of the association, the meeting in London itself, perhaps, excepted.

We learn from the local secretary that the other colonies of the Empire are showing great interest in the forthcoming meeting, and that letters received from Australia and the Cape, not to mention British possessions nearer home, such as Bermuda and Barbadoes, show that the profession there will help to increase the success of the meeting. The profession in Montreal are pleased that the efforts made by the Local Executive to render the meeting national rather than local are being so highly appreciated throughout the Dominion.

No steps have as yet been taken to ask for subscriptions outside Montreal, and unless the meeting attains enormous dimensions it is probable that nothing more will be attempted. We are informed, however, that a leading member of the profession in Manitoba had offered no less than \$100 in aid of the expenses of the meeting. We are asked by the secretary of the museum sub-committee to state that although many applications for space in the

museum building have been received, the space for which tenders are asked will not be allotted until March 27th, in consequence of the necessary length of time required for correspondence with British exhibitors.

We are glad to be able to announce that the Canadian Pacific and Grand Trunk railways have agreed to extend to Canadian members of the association the privileges granted to foreign members and to guests, namely, half rates. Such a concession has never been previously granted, and is a sign of the great national importance attached by the companies to the meeting in August. In other words, to quote the words of a joint letter received from Mr. W. E. Davies, of the Grand Trunk, and Mr. D. McNicoll, of the Canadian Pacific: "It has been decided to extend to Canadian members of your association the same basis of rates to and from the convention, and excursion fares, as we have already advised you we are willing to extend to visiting members from over the sea." Practically every Canadian member can thus attend the meeting and return at the rate of a single fare for the journey, and can join the excursions at the same rate.

THE AMERICAN SOCIETY OF SUPERINTENDENTS OF TRAINING SCHOOLS FOR NURSES.

THE fourth annual meeting of this society was held in Baltimore on February 2. It numbers ninety members, and the opening session was well attended, delegates being present from all parts of the United States and Canada. We learn from the address of the president that there are now something like 250 training schools in the United States and Canada. Miss Nutting spoke as follows:

"These schools are teaching the sterling virtues of obedience, self-control, perseverance, accuracy, and economy. Many of the women who come to us purposeless, undisciplined, and dependent, go away at the end of their term strong, skilful, resolute women, able to stand alone and help others to stand also.

"We say that to raise the standard of life you must raise the standard of motive, and the work of reformation of the vital conditions of existence in the homes and families of the masses can in no way be better reached than by those who can bring a healthful influence to bear. I shall always hold that the district nurse, provided she is the right woman, can do more for the improvement of a

household and family than all the sermons or tracts that were ever written."

Speaking of the overcrowding of the profession, she said that the nurses would have to do as physicians—namely, extend the length of term of study, require more rigid examinations, and add to the curriculum. She then went on to elaborate her views on these important aspects of the subject. Many interesting papers were read, and free discussions followed in all instances.

The citizens of Baltimore showed much kindness in a social way. On the afternoon of the first day the members attended a reception by Mrs. Charles J. Bonaparte, and were much interested by their inspection of the heirlooms of the Bonaparte family. On the same evening they attended a reception by the trustees and officers of the Johns Hopkins Hospital. On the afternoon of the second day they attended a reception by Mrs. Osler, wife of Professor Osler. Other receptions were tendered in various parts of the city. We are informed, however, the regular work of the various sessions was in no way neglected. The members of the association are very enthusiastic, and are determined to make their organization a decided success. The president-elect for next year is Miss M. A. Snively, the superintendent of the Training School for Nurses in the Toronto General Hospital. The next meeting will be held in Toronto.

DEATH FROM CHLOROFORM.

DEATH occurring from the administration of an anæsthetic is always a distressing circumstance, both to the physician and the patient's friends. It is doubly so when the administration has taken place without friends being present or having knowledge of the fact that the circumstances necessitated such a procedure. In accident cases, where local anæsthesia is not practicable, and urgency demands immediate action, it is perfectly admissible to administer an anæsthetic. Unless the urgency is great, friends should be made aware of the condition before any operation is undertaken. A death from chloroform, administered for an injury to the finger, occurred lately in Brantford. We regret exceedingly the sad occurrence, and the unpleasant position of the physicians concerned. This is possibly a good opportunity to point out the great advantage of local anæsthesia in these cases.

Local anæsthesia, when properly produced, is void of danger. Schleich's fluid produces complete local anæsthesia in a very few minutes, lasting long enough to perform minor operations about the extremities, and is free from danger. The patient, who has his senses, can be consulted about the extent of the operation should that be necessary. Local anæsthesia has one other advantage, besides being free from danger, in that it tends to make the surgeon more conservative. Conservative surgery, of the hand especially, is good surgery, and in these days many a finger can be saved that in pre-antiseptic days had to be sacrificed. We wish to urge on the profession the importance of local anæsthesia for the minor operations for their own as well as for the patients' welfare.

SICKNESS AND DEATH FROM ILLUMINATING GAS.

THE necessity which has frequently been pointed out for some means for lessening the death rate due to illuminating gas has been again emphasized by a recent sad occurrence.

It is now about twenty years since the deaths from this cause began to be so much more frequent. In 1885 the State Board of Health of Massachusetts collected and published a large amount of valuable information on this subject. In reply to a circular issued to 189 cities it transpired that forty-five cases of fatal poisoning had occurred in seven and a half years in cities using the then newly invented water gas, as against forty cases in twenty-one years in cities using coal gas. Experiments as to the relative lethal effects of the two gases were also made by placing some dogs, cats, rabbits, etc., in two separate rooms alike in size and all other respects, and furnished with gas burners of equal delivering capacity, the only difference being that into one room water gas was introduced, through the burner, and into the other, coal gas. In the room with the water gas deaths began to occur in three hours, and all were dead in eight hours; in the other, all were alive and capable of being aroused in eight hours, and even in twenty-four hours only two were dead. A very important clinical point is that in a hotel or other dwelling, a person subjected to the influence of gas, made from coal, would generally be discovered before this more slowly acting gas had placed him beyond the power of recovery; whereas water gas acts so much more rapidly that a person is frequently dead or beyond hope when the accident is noticed. The different effect of the two gases was pointed out to be due to the amount

of carbon monoxide (CO) being so much greater in water gas than in coal gas, the relative average percentages being 27.40 and 5.53, respectively ; and this explanation has been upheld by various observers up to the present time. In Toronto, the illuminating gas supplied is said to be a mixture of coal and water gases, the relative proportions varying at different times. It is stated that the mixture has lately contained about twelve per cent of carbon monoxide.

The advocates of water gas have tried to offset its poisonous character by claiming for it as an advantage that it is less explosive than gas made from coal, on account of its smaller percentage of marsh gas. The force of this contention does not count for much, especially in view of such accidents as the fatal explosion in Boston this month.

The pathological condition in these cases of poisoning has long been known to be due to the much greater affinity of the hæmoglobin of the blood for carbon monoxide than for oxygen. The hæmoglobin, by degrees, ceasing to carry oxygen from the lungs to the tissues. It was, until recently, the general belief that the resulting carboxyhæmoglobin was so stable a compound that the carbon monoxide was never dissociated from the hæmoglobin until the blood corpuscles with this hæmoglobin underwent a disintegration. In a discussion at the meeting of the British Medical Association last autumn the opinion prevailed that this view, held by Claude Bernard and others, must be modified, inasmuch as the observations and experiments of Schutzenberger, Saint Martin, and Haldane, show that the carbon monoxide in the presence of oxygen is slowly converted into carbon dioxide. But the fact remains that the greater the amount of carbon monoxide the more severe and persistent are the effects, and that in many cases serious disturbances of the nervous and circulatory symptoms will persist for weeks or months.

It has been noticed from time to time, and in various places, that chronic poisoning from leaks of illuminating gas is by no means uncommon. That nervous prostration, nausea, chilliness, sore throat, and other symptoms are produced by it, and erroneously attributed to overwork, indigestion, etc.

The preventive aspect of this subject is one that deserves serious consideration. Amongst the causes of the fatalities are the following :

- (1) The character of illuminating gas, which has been fully discussed.

(2) Inadvertence in extinguishing it ; blowing it out, or turning it out and then inadvertently turning it on again.

(3) Defective burners, in which the stop pin has dropped out or worn off, or in which it turns below the shoulder.

(4) Burners in which the tap turns too easily, and allows of a slight touch turning it back the wrong way.

(5) The absence of automatic burners.

(6) The practice sometimes adopted in hotels of turning the gas off at the meter at midnight, and turning it on again in the morning for the use of the servants, some hours before guests are discovered asphyxiated.

As regards precautions against these causes, it may be observed :

(1) It is a question for jurists and legislators to consider to what extent a corporation, for the financial benefit of its members, subscribers, or even customers, should be permitted to supply a dangerously poisonous compound, or whether persons who have not used due skill, care, and caution, or who may be somnambulists, or sleepily stupid on retiring, should be liable to the death penalty, in order not to disturb the best financial results. It does not seem unreasonable, at any rate, that those who manufacture and supply the poisonous gas should shoulder a large portion of the responsibility of seeing that the individual user, for the time being, is so circumstanced that the danger may be at a minimum. The inspector who comes to see how much gas has been burned might also rapidly inspect each gas fixture, spot defective burners, and see that sliding chandeliers have not gone dry. He need not necessarily inspect every burner each quarter ; in private houses especially he will soon know where frequent inspection is unnecessary.

(2) Many hotel-keepers take great care to post printed instructions ; and also to warn guests whom they suppose unaccustomed to gas fixtures.

(3 and 4) Might be obviated by a periodical inspection by some official of the gas company or of the health department.

(5) Some gas burners have been invented by which the flow of gas is cut off in the absence of the heat of the gas flame. Sufficient effort and observation in connection with the use of them is still wanting on the part of executive health authorities.

(6) The practice referred to above ought to be stopped, so far as public houses are concerned, by municipal action. The object is sometimes economy, sometimes a mistaken effort to avoid accidents.

(7) Although ventilation by fanlights is, in some cases, objectionable, yet until some method of insuring against the escape of

unburned gas is in operation, it would be desirable to insist that every room in a hotel should be provided with an opening above the door, so that the odor of escaping gas may be detected ; and that the management of the hotel should by a lock keep these fanlight openings unclosed, unless a guest (who may prefer to get his supply of breathing air fresh from out doors) specially requests them closed, and the management is convinced that he is possessed of the necessary qualifications to insure against an escape of unburned gas.

We do not desire to dogmatize on this subject, and do not claim that our suggestions are the best that can be offered, or that they may not be improved upon when tested in practice ; but we do think it time that some of them should be put in force, and that some greater interest should be taken in the subject by legislators, executive officers, and the public generally.

We will in our next issue refer to some other points in connection with this subject which are of interest from a therapeutic standpoint.

W. O.

Correspondence.

"DOCTOR OF REFRACTION."

TO the Editor of THE CANADIAN PRACTITIONER :

DEAR SIR,—The title "Doctor of Refraction" is used so as to mislead the public. The diploma is given by a man or men who have no more right to do so, from a legal or medical point of view, than any man who walks the streets. There is nothing to prevent any man, who may wish to make a little money, advertising to give such a diploma. There is no corporation connected with any of the medical colleges which gives such a degree. The whole thing, in other words, is a farce, and originated so as to delude the public with the idea that by going to a man calling himself "Doctor of Refraction" it is going to one who has been properly trained. The public being thus fooled and patronizing these men liberally acts exactly as the promoters, the optical companies, wish, and hence a sale of a large number of spectacles. This is the commercial side of a medical question of serious import to the people. Glasses are always given if the person can be got to buy, scarcely the slightest care being taken as to whether the eyes are suitable for glasses. Even if proper care were exercised, which is not, still the "Doctor of Refraction" is so thoroughly ignorant that it is quite impossible for him to be a judge. Thus you see a man is treating the eye who knows really nothing about it. As a consequence, great danger results from many causes. One is that a diseased condition of one or more parts of the eye, deeply seated, may be present, which can only be made out by the oculist, and glasses being advised, for it is the "Doctor of Refraction's" business to sell glasses almost as anyone would tape or groceries, a most injurious thing is done.

These "Doctors of Refraction" are so ignorant that they know just enough to be exceedingly dangerous. I can't understand why such a stringent law has been passed and enforced, we will say in reference to plumbing, that no one but a plumber is allowed to do

this work, and at the same time any Tom, Dick, or Harry is allowed to treat the eye, for giving glasses must of necessity act upon the whole eye—and apparently the law and public opinion allow it to go on. It seems as if the climax of false pretensions had almost been reached when the “Doctors of Refraction” endeavor further to impress the public by going through the form of using the ophthalmoscope.

In my next, if this is insisted upon, I shall speak of the position the public and medical profession take, and should take, with regard to this matter.

G.H.B.

To the Editor of THE CANADIAN PRACTITIONER :

DEAR SIR,—Will you kindly give space to the following in an early issue, and thus aid in this important work? Of course, without the co-operation of the leading medical journals, nothing can be accomplished in that behalf. Trusting you will so favor, I may hereby thank you in advance, and am, sir,

Very truly yours,

EDWARD PLAYTER.

To members of the medical profession individually, in the interests of medical science :

As there is evidence tending to prove the theory that all persons predisposed by heredity to consumption have a respiratory capacity or action insufficient for good, vigorous health, probably a proportionately small chest, with insufficiency of lung membrane; that the predisposition is mainly or primarily due to this cause; in other words, that the insufficient respiratory function is the special primary feature of the predisposition (a condition which may be, practically, acquired by habit, occupation, etc.); I desire the co-operation of the profession in an endeavor to help to establish, by means of collective investigations, the correctness, or otherwise, of this theory.

In this behalf I hereby ask all physicians who have patients predisposed to, or in the early stage of, consumption, to send to me on a post card (will suffice) the information below indicated. As soon as I can study and collate the replies I shall make the results known to the profession.

Give (1) name (or initials); (2) sex; (3) age; (4) occupation; (5) height; (6) weight (average, when in usual state of health); (7) circumference of the chest on a level with sixth costo-sternal articulation, when momentarily at rest after an ordinary expiration,

and also (8) after habitual natural expansion or inspiration (which last (8) usually exceeds the first measurement, expiration (7), by an increase of only about one-fourth of an inch) ; finally (9) the circumference after a *forced* expiration, and also (10) after a forced inspiration (these two measurements, (9) and (10), varying or showing a range of from $1\frac{1}{2}$ to 4 inches). The patient should, of course, be as calm as possible, and had better, usually, practise the *forced* breathing for a few acts before these two last measurements, (9) and (10), are taken.

To be of value, all four measurements should be taken as carefully, accurately, and free from haste as possible.

Any further information, in brief, as to degree of heredity (family history) in cases, *prominent* symptoms, loss in weight, cough, dullness on percussion, etc., etc., or any remarks, will be a decided advantage.

Measurements of two cases, or several, or the average, could be given on one card.

With the hope that many will comply with the above request, and with much respect for and interest in the profession, I am,

Yours truly,

EDWARD PLAYTER, M.D.,

(Address) Ottawa, Ont.

Meetings of Medical Societies.

TORONTO CLINICAL SOCIETY.

THE February meeting was held in St. George's Hall. President Allen Baines in the chair.

Dr. F. L. M. Grassett reported a case of

AMPUTATION AT THE HIP JOINT.

Patient, carpenter. Last spring, first symptom, pain in the groin, was noticed, gradually extending to thigh, accompanied by swelling. In three weeks he was obliged to go to bed. Glands in groin were enlarged and hard. The swelling was most marked in the centre of the left thigh, especially on the outside of the bone. He was kept in the hospital some months, but did not improve. As fears of malignancy were entertained by the surgeons who examined patient amputation was done at the hip by Furneaux Jordan's method. Wyeth's pins were used, digital compression employed, making the operation bloodless. Recovery was complete. Mortality in pre-antiseptic days was about 87 per cent.; now 34.4.

OPERATION FOR NEGLECTED FISTULA

was the title of a paper by Dr. G. A. Peters ; the method he employed had been in vogue formerly, and was used in cases where the internal opening was near the outlet, the fistula narrow and indurated, with an external opening some distance from the anus, and not causing more inconvenience to patients, perhaps, than emitting a little moisture. It might be as deep as the gluteus maximus and extend out six inches. The history and treatment of three such cases were given by the essayist. The whole sinus was laid open, the whole tract of the sinus dissected out, and this large wound stitched up with deep sutures of silkworm gut, approximating the surfaces throughout. A catheter placed in the rectum is of much value, allowing flatus to escape. In these cases the wound healed by first intention, although Allingham says it is almost impossible to prevent feces from getting into the wound.

Dr. Primrose stated that one reason fistulæ did badly often was because all their branches were not reached and scraped at the time of operation. He thought the method suggested in the paper might be applied in treating other fistulæ. He had treated a fistula in the perineum which extended into the ischium in this way with success.

SPINAL CARIES : LAMINECTOMY FOR CORD PRESSURE

was the title of a paper by Drs. D. C. Meyers and A. Primrose. Dr. Meyers said : In the three generations of patient's family a case of Pott's disease existed. The girdle pains, changes in the reflexes and sensory disturbances were referred to. The appearance of kyphosis confirmed the diagnosis.

Dr. Primrose presented charts after Quain showing the sensory areas and the relation of the exit of the nerves to the bodies and laminae of the vertebra, also charts showing transverse and vertical section of the body through the abscess. A detailed description of the operation was given. Patient did well for some weeks, when meningitis supervened, causing death. Material from the cavity showed the bacillus tuberculosis, and a diplococcus. At the p.m. an examination was made of contents remaining. Cultures proved sterile.

Dr. Peters discussed the case.

The society then adjourned for refreshments.

TORONTO MEDICAL SOCIETY.

THE Toronto Medical Society met on the 11th of February.

CHOREA : TREATMENT BY TRAINING.

A paper thus entitled was presented by B. E. McKenzie and H. P. H. Galloway. Their first practical acquaintance with this treatment of chorea arose from having a boy in their gymnastic class who was not only suffering from roto-lateral curvature, but from chorea as well. After the first lesson improvement was noted, and in a week (there being daily lessons) a cure was effected. Three other cases were observed, two of these only for a time, without results. The third, a girl of eleven, had suffered from chorea two years, and had ceased to improve some months before training was commenced. Cure in three weeks. The opinions of the various authorities who had employed this treatment were cited, all of which were commendatory.

Dr. A. McPhedran said it had been stated that this form of

treatment was suited more especially to chronic cases. It had been further stated that this treatment had been in use for fifty years by the leading French neurologists. It was a matter of surprise that the English authorities had not referred to it before. He would be dubious about its use in acute cases; and where there were fever, emaciation, and concurrent inflammatory disturbance it would not be wise to use it. His plan of treatment has been rest and seclusion. This was better than arsenic, or any other form of medication.

Dr. H. Walker thought the principle of treating chorea by training a good one. In acute cases it was necessary to be cautious with the exercises. The majority of the cases he saw were chronic. He had always isolated them, using massage and passive movements from the beginning. In about ten days the resistive exercises were commenced.

Dr. Oakley thought, owing to the alliance of chorea to insanity, these exercises might be used in the latter condition. He thought treatment by isolation a bad one. He had always allowed his patients (and he had had a good many) to take as much nourishment as possible. He had administered arsenic.

Dr. McKenzie said this treatment had been used in the treatment of the insane and of criminals with much success. The virtue of the method, according to Professor Blache, was that passive movements had a remarkable effect. At first the patient's will came into play, either assisting in the movement or the contrary. Little by little the muscles became habituated to associated action, directed by the effort of the operator. The will, which had exercised but a feeble control over the muscular system, gradually seemed to resume its function, and it was then seen that incoherent movements, little by little, diminished in frequency and intensity.

Dr. W. J. Wilson, read a paper on

DEPRESSION OF THE OCCIPITAL BONE.

Marion Sims had first called attention to a fatal form, trismus nascentium, some fifty years ago, but Lockjaw of infants had been described from earliest times. In the south, among the negro children, in some localities, two-thirds of the deaths were due to this cause. Among the causes spoken of were: bad ventilation, suppuration of the stump of the cord, heredity, etc. But Sims had observed that the occipital bone and occasionally the parietal were displaced, and if the condition was corrected early the cases might be cured.

The essayist reported a case from his practice. The third day after an easy labor the child was noticed to have lost the power to

suck ; its thumbs were turned into the palms of the hands, the legs were crossed ; it kept up a whining cry, and every few minutes its muscles became rigid and there was a convulsive twitching of the whole body. The nurse had been carrying it about, and jolting it, the occiput resting on her arm. Child was laid on the side, and kept on one or the other, and was given a few doses of bromide of potassium and ergot. Recovery. P.m's in such cases had shown congestion of the membranes of the brain and cord with clots in the fossæ and cerebellum, some extravasation of blood on the membranes of the spine and brain. A deep congestion of the lungs was frequently noted.

Dr. H. B. Anderson asked if the hæmorrhage in the posterior part of the brain was supposed to be secondary to the convulsion, or whether the depression itself could produce the condition.

Dr. B. E. McKenzie said he had noticed that the essayist had not offered any explanation of why the depression in the occipital bone would produce the condition. It would not be difficult to see how depression in the parietal bones would cause the symptom.

Dr. Oakley said it had been recommended not to allow the infant to lie on anything hard lest that would cause convulsions.

Dr. Wilson said he did not see how the pressure would do the damage referred to. The parietal bones would cause the symptom.

Dr. Galloway asked why the proportion was so high among the negroes. One would think from its epidemic character that it must be due to some acute infectious process, and that the hæmorrhage would be one of the results.

Dr. Wilson said that the reports were from localities where the inhabitants were nearly all negroes. The large percentage was due to the bad hygienic surroundings and bad management of the cases. It was unlike tetanus in that it came on earlier.

Dr. B. E. McKenzie presented a boy, æt. 15, with a short, deformed hip and leg and curvature of the spine. There was some history of tubercle in the family. When a week old a swelling appeared on the left hip which was followed with suppuration. Ill one year, during which time pus discharged through openings in the hip. Pieces of bone came out at various times. The report of a second similar case was given by the doctor. He thought the pathology in one case was the same as that in the other—acute arthritis and epiphysitis. Three lines of treatment were considered—amputation, the excision of the knee-joint, and the use of a mechanical appliance. The last was decided upon. He would direct the use of a modified Thomas' splint with a lock joint at the

knee, and seven or eight inches support under the foot of the short leg.

Dr. G. H. Carveth reported a case of sarcoma of the intestine.

Dr. H. T. Machell showed a five week foetus with membranes intact. When held to the light the foetus (about $\frac{7}{8}$ inch in length) could be seen floating in the fluid. The chorionic villi could be seen attached to the outside of membranes.

TORONTO PATHOLOGICAL SOCIETY.

REGULAR meeting held in the Biological Building, on January 30th, 1896. The vice-president H. B. Anderson in the chair.

Members present. Anderson, Hamilton, Oldright H. H., Oldright W., Carveth, Graham, McPhedran, Starr, Caven J., Thistle, Cameron, McKenzie J. J., Peters, Wilson R. J., Primrose, Amyot.—Visitors Drs. Wood and McCulloch.

G. H. Carveth and H. B. Anderson presented a

MYXO-SARCOMA OF THE INTESTINE.

Remarks. This is a rare condition, only fourteen cases have been reported in medical literature. These were collected by Madeling in 1882. Patients ranged from thirty to fifty years; average duration of life thirteen months. They were usually primary, commencing in the mucous layer. The shape was annular. In the early stage, excision was allowable. In Park's system it is stated that the disease is most frequent in the young and is usually secondary. The symptoms are similar to those of carcinoma. The tumor could frequently be felt; Senn states that a sarcoma of the intestines never comes to the notice of the surgeon until the tumor has given rise to some form of intestinal obstruction. Myxo-sarcomatous degeneration is a common occurrence in them. A correct diagnosis is only made in the post mortem room.

In this case the patient was a young man who had always been in good health. He had suffered from two or three attacks of indigestion and colic during the past two years. During an attack of this sort in November, 1895, he consulted two different medical men, who washed out his stomach. Growing worse, he was obliged to take to bed. Pain, vomiting and constipation were the chief symptoms. There was no tumor, no tenderness and no rise of temperature. Pulse somewhat rapid. In one week he was sent to the

hospital as the symptoms were much worse. He vomited faecal matter. Tumor was found by rectal examination. Dr. A. A. Macdonald made an exploratory incision tentatively. The symptoms were those of acute obstruction of the bowels. The tumor was found to be soft and it was deemed advisable not to disturb it in any way. An opening was made in that portion of the intestine nearest above the tumor and connected with the abdominal wall, making an artificial anus. He died two days later.

H. B. Anderson gave a report of the post mortem. There was a yellowish tint to the conjunctiva and a cachectic hue to the skin. The peritoneum showed recent septic peritonitis, the exudation being of a thin, yellowish, purulent color. There was some glueing together of the intestines, and a large tumor filled the pelvis and was in the wall of the intestine. The tumor was quite easily dislodged from its position, the adhesions giving way readily. Below the tumor, the bowel was soft, dark, and necrotic, so that it tore very easily. The surface of the tumor was rough and irregular and apparently necrotic. A considerable portion of the tumor had ulcerated off and was lying free in the lumen of the intestine. Obstruction was apparently complete. The growth was eight and a half feet from the pyloric end of the stomach. It was very soft and had something of the appearance of oedematous fat. Microscopic examination showed it to be a myxo-sarcoma. The ground substance was fibrillated in character, and imbedded in it there were a great number of cells. Dr. Anderson then discussed the various forms of these sarcomata. In answer to Dr. Graham regarding the condition of the lower part of the bowel, Dr. Anderson said it was collapsed.

Dr. Caven says that the peculiarity in the case is this fact that that there were no secondary deposits. Some say that there is difficulty in diagnosing with the microscope between oedematous fibroid and myxo-sarcoma. He referred to a paper of Johnson's on soft fibroids. He considered that they were, in fact, sarcomatous. Dr. Anderson thought that the short duration of the growth would account for the absence of secondary deposits.

Dr. McPhedran suggested that the cause of death in this case was septic and not from the tumor or obstruction. He thinks that the bacteriological condition should be looked into in all these cases.

Dr. Anderson said he looked upon the septic condition as arising from the growth within the wall of the intestine. There was no evidence of a septic condition in the other organs.

Dr. Caven referred to the terminal infection found in four cases

of chronic heart, kidney, and liver disease. A pure culture of staphylococcus pyogenes aureus was found. Also bacterium coli commune.

J. J. McKenzie said that the bacterium coli commune increased the virulence in forms of peritonitis from obstruction.

Dr. Caven stated that in cases of sudden death within a short time after operation, where there is no peritonitis and generally called "death from shock," death is really caused by sepsis, cultures giving staphylococci and streptococci.

Carcinoma of the breast was presented by Dr. W. Oldright.

CARCINOMA MAMMÆ.

I saw the patient in consultation with Dr. A. W. Mayburry on December 3, 1896.

The history was as follows: Age 28. Family history negative. Has one child about two and a half years old. First noticed small lumps in the right mamma about eighteen months ago; have been painful for the last two or three months. No history of traumatism. No cachectic appearance. No retraction or puckering of nipple or skin.

On palpation a lump apparently about one and a half inches in its transverse diameters and less in depth was discernible about an inch and a half above and to the outer side of the nipple. It was not very hard.

A lymphatic was also noticed just below, or in the lower part of the axilla. A similar but smaller lump was felt in the left breast, and a lymphatic rather more noticeable similarly situated on the left side.

We advised an exploratory incision, the complete ablation of the breast, and all tissue liable to be infected to be immediately carried out should the exploration reveal malignant disease. On December 9 a portion of the breast was removed, including the little tumor and sufficient surrounding tissue to guard against auto-infection should the diagnosis of non-malignancy not be made positive. After removal a section was made through the growth; the microscopic appearances were not such that we felt justified in proceeding with the extensive operation of complete removal. This view was unanimous amongst those present, Drs. Mayburry, Dwyer, H. H. Oldright, Ryan, and myself. The wound was closed and healed rapidly by first intention.

Microscopic sections of the tumor were made by Mr. Walter Mayburry, and were examined also by Drs. J. Caven, Harris and Amyot, and were pronounced carcinomatous. These sections are now presented for your examination.

In consequence of the results of the microscopic examination the complete operation was carried out on the 14th of this month, the same gentlemen being present as at the first operation.

Halstead's method was adopted. You will notice two prolongations or processes of the removed mass: the one to the inner side subdividing into two, representing the tissues respectively above and below the axillary and subclavian vessels, as far up as the latter could be reached by drawing the arm and clavicle upwards; the latter subdivision also includes the tissues surrounding the pectoralis minor. The other process consists of the glandular, fatty and connective tissue of the axilla.

Union took place by first intention, and the patient left the hospital in two weeks.

This case is mainly interesting from a pathological point of view on account of the difficulty of diagnosis, the apparently trivial symptoms, and, with one exception, the innocent microscopic appearance. It is, I think, unusual to find so small a growth so soft, so little involvement of skin, with such a lengthy existence; whilst even the pain might have been caused by mastitis, with resulting cysts; but the pain coming on late in the period of existence of the lump was suspicious; as for lymphatic involvement I have seen that in connection with simple cyst formation in the breast.

Dr. Graham referred to a case of

PAGET'S DISEASE OF THE NIPPLE,

shown last year. She consulted a homœopathist later, not heeding the advice that the breast should be removed; was operated upon for a ventral hernia, which was not a source of much trouble, and told that the condition in the breast would amount to nothing. Since that time the attending physician has operated for extensive carcinoma with axillary involvement.

Dr. Amyot presented a tuberculous lung. Patient about 45 years of age. Had knee-joint trouble about thirty-five years ago, resulting in partial ankylosis. Had occasional attacks of hæmoptysis during the last ten years. Two years before death he fell and received some injury to the testicle, from which a hydrocele developed. It was aspirated four times; on three of these occasions he had hæmoptysis.

Final illness began with a so-called cold. Had a slight hæmorrhage; two days later he had a severe hæmorrhage, and two days after this another. Crepitant rales could then be heard over both lungs. No dullness. Bacilli of tuberculosis were found in abun-

dance. Respiration 40 to 50. Died five days after the last hæmorrhage. For two days before death the percussion note was dull over the greater portion of the chest, particularly over the lower left side, where during the three days previously it was actually hyper-resonant. The right infra-clavicular region was flat and depressed.

On post-mortem the lung showed only slight scarring. There was a scar at the left apex. Lungs were emphysematous, but not solid. Small bodies could be felt all through them. Specimen was put in formaline solution, and left until the present time (about six months.) There are small whitened areas throughout. Rest of lung tissue brownish in color.

Microscopically. White areas show leucocytic infiltration with caseation. Rest of the alveoli contain a quantity of red blood corpuscles with hyaline looking material (serum coagulated by formaline); could not find any bacilli. No tubercles in the heart muscle, the only other organ taken.

Dr. Graham asked how long it took for caseation to take place.

Dr. Cameron thought it might take place in any time, as he considered it a coagulation necrosis.

Dr. Primrose showed a tumor which had been removed from the navel of an infant. The tumor was about the size of a filbert nut, grey in color, and possessed a gelatinous appearance on the surface. It was pedunculated. The pedicle was ligated, and the tumor removed. On microscopical examination it was found to possess the following characteristics: The central part was composed of fibrous tissue, while the surface presented adenomatous structure. The entire superficial portion of the tumor was studded over with tubular glands, indistinguishable from Lieberkuhn's crypts of the intestine. These glands opened on the fore surface. The condition in fact was such as might be produced by a pedunculated protrusion of the mucous membrane into the lumen of the bowel.

Book Reviews.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY: Being a yearly digest of scientific progress and authoritative opinion in all branches of medicine and surgery, drawn from journals, monographs, and text-books of the leading American and foreign authors and investigators, collected and arranged with critical editorial comments by Drs. J. M. Baldy, C. H. Burnett, Archibald Church, C. F. Clarke, Chalmers DaCosta, Dorland, Gibney, Homer Gibney, Griffin, Guiteras, Hamann, Hansell, Hardaway, Hardie, Hersman, Hirst, Ingalls, Keen, Leffmann, Norrie, Patrick, Pepper, Riesman, Starr, Stengel, Stewart, and Westcott. Under the general editorial charge of George M. Gould, M.D. Profusely illustrated with numerous wood-cuts in text, and thirty-three handsome half-tone and colored plates. Philadelphia: W. B. Saunders, 925 Walnut street.

The book gives an admirable epitome of things new in the medical year of 1896. It is no simple matter to select the best among the almost innumerable new things published in periodicals, monographs, text-books, etc.; and, of course, the value of a work such as this depends largely, if not altogether, on the judgment displayed by the editors in the various departments. The names of Dr. Gould's co-workers in connection with this book are well-known to the profession of Canada, and much that is good, and nothing that is bad, will be looked for. We desire to say to those who expect much that they are not likely to be disappointed.

TEXT-BOOK OF THE PATHOGENIC BACTERIA. Specially written for students of medicine. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia, etc. 359 pages, finely illustrated. Cloth. Price, \$2.50 net.

The book presents a concise account of the technical procedures necessary in the study of bacteriology. It describes the life-history of pathogenic bacteria, and the pathological lesions following invasions. The illustrations have been gathered from standard sources, and comprise the best and most complete aggregation extant. It—written by one in every sense competent for so important an undertaking—is a wonderful help to the busy practitioner. The material is complete and up to date. The knowledge of pathogenic bacteria has increased wonderfully during the past few years, and, unless by such volumes as this, the man in general practice could not keep himself acquainted with the advancement. We can recommend the work to the profession. The publishers have illustrated this volume with their usual great care.

AN AMERICAN TEXT-BOOK OF OBSTETRICS FOR PRACTITIONERS AND STUDENTS. By Drs. James C. Cameron, Edward P. Davis, Robert L. Dickinson, Charles Warrington Earle, James H. Etheridge, Henry J. Garrigues, Barton Cook Hirst, Charles Jewett, Howard A. Kelly, Richard C. Norris, Chauncy D. Palmer, Theophilus Parvin, George A. Piersol, Edward Reynolds, and Henry Schwarz. Robert C. Norris, M.D., editor; Robert L. Dickinson, M.D., art editor. With nearly 900 colored and half-tone illustrations. Philadelphia: W. B. Saunders, 925 Walnut street.

Our review of this admirable text-book of obstetrics should have appeared several months ago. We regret the delay which was caused by an accident, chiefly because such a work as this should be announced at the earliest possible date after its publication. The list of contributors contains the well-known names of very able obstetrical teachers and practitioners. The editors tell us that "while the various authors were each assigned special themes for discussion, nevertheless an attempt has been made, so to correlate the subject-matter as to preserve throughout the text a logical sequence not always found in composite publications." We have only to say respecting this that they have been remarkably successful in carrying from beginning to end a continuity that deserves the highest commendation. We can find no single section in the whole book which calls for adverse criticism. The numerous colored and half-tone illustrations are, on the whole, better than any we have seen in other text-books on midwifery. The book is, perhaps, too large to become popular among medical students; but we can assure this important class of readers that the extra time required for its perusal should not be considered a drawback. As a matter of fact, a system of cramming from concise "aids" can never make well qualified obstetricians. We cannot discuss the many merits of the work in detail; but, we may say, in a general way, we believe it is the best text-book in its subject now available for advanced students (we might even delete the word "advanced") and general practitioners.

ANOMALIES AND CURIOSITIES OF MEDICINE. Being an encyclopaedic collection of rare and extraordinary cases, and of the most striking instances of abnormality and all branches of medicine and surgery, derived from an exhaustive research of medical literature from its origin to the present day, abstracted, classified, annotated, and indexed. By George M. Gould, A.M., M.D., and Walter L. Pyle, A.M., M.D. With 295 illustrations in the text and 12 half tone and colored plates. Philadelphia: W. B. Saunders, 95 Walnut street. 1897. Prices, cloth, \$6 net; half morocco, \$7 net. Sold only by subscription.

The authors of this very interesting book have spent a great amount of time and work in searching through the large libraries of Europe and America for striking cases of abnormalities, or, as they say, of anomalies and curiosities of medicine, surgery, and midwifery. As a result of their enormous work we have in this volume a description of these almost countless curious things which they have selected from ancient and modern medical literature. It would be impossible in a short review to

give any adequate description of the scope of the book ; but the following headings may give some idea of the contents : Genetic, prenatal, and obstetric anomalies ; prolificity, major and minor terata ; anomalies of stature ; longevity ; physiological anomalies ; surgical anomalies of the head and neck, extremities, thorax, abdomen, genito-urinary system ; miscellaneous surgical anomalies ; anomalous skin diseases ; historic epidemics ; etc.

THE DISEASES OF INFANCY AND CHILDHOOD. By L. Emmett Holt A.M., M.D., Professor of Diseases of Children in the New York Polyclinic ; Attending Physician to the Nursery and Child's and the Babies' Hospital, New York ; Consulting Physician to the New York Infant Asylum, etc., etc. With two hundred and four illustrations. Appleton & Co., New York. Geo. N. Morang, Canadian Agent, 63 Yonge street, Toronto.

With his extensive clinical experience, his exceptional opportunities for post-mortem observations, and his long experience in the art of teaching pædiatrics, Professor Holt is peculiarly fitted to write a book on this subject. His writings and clinical lectures have always been models of clearness, conciseness, thoroughness, and systematic arrangement. The volume excels in these good qualities, and is, moreover, thoroughly practical and up-to-date. It is written about children under eight years of age. Surgical subjects are dealt with only in so far as medical work is concerned, and no attempt is made to describe surgical operations. The first sixty pages are taken up with discussion of the hygiene and care of infants and young children, their growth and development, and the peculiarities of their diseases. One hundred pages are devoted to the nutrition of infants, which includes a discussion of the problems of nursing and of artificial feeding. He is a firm believer in cows' milk as a substitute food, properly modified to suit the exigencies of each case. The chapter on acute inanition, mal-nutrition, and marasmus is a very suggestive and helpful one. If every practitioner could read what he says about proprietary foods the evils resulting from their use would soon cease. The following quotation is *apropos* :

"There are two diseases—scurvy and rickets—which have so frequently followed their prolonged use that the conclusion cannot be escaped that they were the active cause. This is the unanimous verdict of all physicians whose experience entitles them to speak with authority on the subject of infant feeding."

Diphtheria is dealt with in a chapter of fifty pages, and a very valuable chapter it is. The author is a strong advocate of antitoxin, both for prophylaxis and for treatment during the first three days of the disease. But other methods are not to be abandoned. Briefly, he advises treatment as follows : (a) Antitoxin ; (b) stimulation (alcoholic and strychnia) ; (c) local cleanliness (hot boracic lotions, weak). Peroxide and bichloride do not enter into his pharmacopœia for this disease. But the bichloride is recommended for pseudo-diphtheria, to which a separate chapter is devoted. Caustic fumigations may be useful in certain cases.

Broncho-pneumonia is also very fully handled. Here the value of the author's post-mortem work is seen. The chapter is illustrated by twelve cuts and one plate, from original drawings, and showing the pathological changes at different stages of the disease. Under the head of physical signs one sentence deserves special notice: "It cannot be too often repeated that broncho-pneumonia may exist without sign of consolidation at any period during the course of the disease."

In the present position of medical science, any physician's library without a recent work in *pædiatrics* is incomplete, and no book could more satisfactorily fill the vacant shelf room than this volume.

AN AMERICAN TEXT-BOOK OF PHYSIOLOGY. By Henry P. Bowditch M.D.; John G. Curtis, M.D.; Henry H. Donaldson, Ph.D.; W. H. Howell, Ph.D., M.D.; Frederick S. Lee, Ph.D.; Warren P. Lombard, M.D.; Graham Lusk, Ph.D.; W. T. Porter, M.D.; Edward T. Reichert, M.D.; and Henry Sewall, Ph.D., M.D. Edited by William H. Howell, Ph.D., M.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Philadelphia: W. B. Saunders.

In this large volume of 1050 pages we have a Text-Book on Physiology which, however much it may lack the charm of continuity of style of a single author, pays up for it in the quality of the matter it contains.

Its ten contributors represent the chief American Universities, and each one writes on his own particular speciality. The following subjects are dealt with by Dr. Howell: Secretion; chemistry of digestion and nutrition; movements of the alimentary canal, bladder, and ureter; blood and lymph.

Part III., which deals with the subject of secretion, is very clearly stated, and gives the results of the very latest work on this line. Considerable attention is paid to the subject of the part taken by the glandular epithelium in the production of some, if not of all, the constituents of secretions. Heidenhain's theory of the method of action of the secretory fibres proper is mentioned, but Howell thinks that the truth of it is far from being demonstrated. The pages on the histological changes in the cells during activity of secretion are a concise and accurate description of these phenomena, and are well worth reading. All the illustrations of this subject are first-class, as in fact are all those throughout the volume. In the chapter on the chemistry of digestion and nutrition we are pleased to see that considerable space is given to the discussion of the nutritive value of the proteids. This is a subject of great practical importance to the physician when ordering the "dietary" of his patients, as well as of great interest to the physiologist.

In Chapter VI., on the Physiology of the Leucocytes, although reference is made in a foot-note to Kanthack and Hardy's work on the blood, nothing further is said. We think that they have proved pretty conclusively that there is no such thing as a "neutrophile," and we would like to have seen this mentioned in the text. For the purposes

of physiology the classification of leucocytes here given is, perhaps, all that is necessary. Three classes are recognized (*a*) lymphocytes; (*b*) mononuclear leucocytes, and (*c*) polymorphous or polynucleated leucocytes. We would like to have seen the term polynucleated dropped entirely, as it is certainly a misnomer. The subject of the chemical composition of the blood is dealt with at some length, and is a clear and able statement of all that has been worked out on this line.

Part X., on the "Central Nervous System," by Henry H. Donaldson, Ph.D., occupies 139 pages of the volume. We are glad to notice that in the introduction to his subject Dr. Donaldson starts off by insisting upon the unity of the central nervous system, and emphasizes the fact that by dissection the nervous system is found to be continuous throughout its entire extent. We think that many students, and even practitioners, are apt to forget this fact; many are in the habit, for instance, of speaking of the sympathetic nervous system as though it had no connection with the rest of the nervous system. Therefore this opening note is to disabuse the student's mind of all such ideas. The most recent work on the histology of the nerve cell, which has so much simplified the study of the nervous system, is well stated and clearly illustrated.

The subjects of respiration and animal heat are ably dealt with by Dr. Reichert. Dr. Porter writes upon the innervation of the heart and blood vessels, and the nutrition of the heart. The general physiology of muscle and nerve, and the action of locomotor mechanisms, form the subjects discussed by Dr. Lombard. A very readable part is the first part of Chapter VII., by Dr. Curtis, on the mechanics of the circulation of the blood, and of the movements of the lymph. In speaking of the structure of the semilunar valves, Dr. Curtis makes note of the fact that "as the valve lies immediately above the base of the ventricle the segments rest upon the top of the thick muscular wall of the latter, which affords them a powerful support." This is a point which is not noted in many physiologies, and serves well as a partial explanation of how these valves (pulmonary and aortic semilunar) bear the great pressure of the columns of blood.

Chapter XII., on Reproduction, is by Frederick S. Lee, Ph.D., and the last chapter on the chemistry of the animal body is by Graham Lusk, Ph.D., of Yale Medical School.

Mr. Saunders is to be congratulated on being the publisher of such an able and useful volume. Although written by men of such high scientific reputation it is not too deep for the primary student of physiology, and we are sure it will be very favorably received by both professors and students. As to the workmanship displayed on the book we need say very little; the letter press, as well as all the illustrations, are the best that could be desired. The large size of the volume may possibly be somewhat of an obstacle to its sale, still it is not much more bulky than many of the works on the practice of medicine. In conclusion we may state that no person who buys this volume will be disappointed with what he gets.

Medical Items.

THE Tri-State Medical Society, of Iowa, Illinois, and Missouri, meets in St. Louis April 6, 7, and 8, 1897.

DR. R. H. SOMERS (Tor. '95), of Le Mars, Iowa, was in town attending the funeral of his sister, who died suddenly.

DR. STEEP, of Winnipeg, has been appointed medical attendant upon the Indians of Clandeboye agency, Manitoba, in the place of Dr. Orton, ex-M.P.

DR. J. P. LEE has removed from Niagara Falls, Ont., to Kingsmill, where he succeeded Dr. F. A. Wigle, who retired from active practice from ill health. Dr. F. A. Wigle is rapidly regaining health in Ruthven.

THE Board of Management of the Ontario Medical Library Association desire to acknowledge the receipt of Treves' System of Surgery, and nine volumes of Transactions of Association of American Physicians.

DR. THOMAS VERNER has returned from Rossland. He says that the opportunities for the practice of medicine are no greater there than elsewhere. There are thirteen doctors in Rossland. The doctor has a wonderful idea, though, of the mineral wealth of the place.

AT a recent meeting of the Board of Trustees of the Jefferson Medical College, Philadelphia, Dr. J. Chalmers DaCosta was elected Clinical Professor of Surgery. Dr. DaCosta has been connected with the College for many years, and has recently been Demonstrator of Surgery and Chief of the Out-Patients' Department. The new appointment is made in recognition of his long service and valuable contributions to surgical literature.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

PRELIMINARY PROGRAMME FOR THE FOURTH SESSION TO BE HELD IN
WASHINGTON, D.C., MAY 4, 5, 6, 1897.

President—William H. Welch, M.D., LL.D., Baltimore, Md.

Treasurer—Newton M. Shaffer, M.D., New York City.

Chairman of the Executive Committee—Landon Carter Gray, M.D., New York City.

Secretary—William H. Carmalt, M.D., New Haven, Conn.

The meetings of the Congress will all be held in the Columbia Theatre, corner of Twelfth and F Streets, N.W.

Tuesday, May 4—A business meeting of the Congress will be held from 1.30 to 2 p.m. From 2 to 3.30 a general meeting of the Congress under the direction of "The American Ophthalmological Society." Subject: "The Gouty and Rheumatic Diatheses, and Their Relation to Diseases of the Eye." Papers will be read by Dr. Charles Stedman Bull, of New York City; Dr. S. Oliver Richey, of Washington, D.C.; Dr. S. D. Risley, of Philadelphia, Pa.; Dr. Robert Sattler, of Cincinnati, Ohio; and Dr. R. A. Reeve, of Toronto, Canada; to be followed by a discussion, in which Dr. J. M. DaCosta, of Philadelphia, Pa., and Dr. Henry M. Lyman, of Chicago, Ill., members of the Association of American Physicians, and others, will participate. From 3.30 to 5 p.m. a general meeting under the direction of "The American Otological Society." Subject: "Otology in its Relations to General Medicine." A paper by Dr. Clarence J. Blake, of Boston, Mass.

Wednesday, May 5—From 2 to 5 p.m. a general meeting of the Congress under the joint participation of "The Association of American Physicians," "The American Physiological Society," and "The American Pediatric Society." Subject: "Internal Secretions Considered in their Physiological, Pathological, and Clinical Aspects." Dr. William H. Howell, of Baltimore, Md., and Dr. Russell H. Chittenden, of New Haven, Conn., will speak in behalf of The American Physiological Society; Dr. J. George Adami, of Montreal, Canada, Dr. James J. Putnam, of Boston, Mass., and Dr. Francis P. Kinnicutt, of New York City, in behalf of The Association of American Physicians, and Dr. William Osler, of Baltimore, Md., in behalf of The American Pediatric Society. The papers will be followed by a discussion.

Wednesday May 5—Evening Meeting.—8.15 p.m., address by the President of the Congress, Dr. William H. Welch, Professor of Pathology in the Johns Hopkins University, Baltimore, Md., to be followed by a reception by the President at Rauscher's, corner of Connecticut Avenue and L Street.

Thursday, May 6.—From 2 to 3.30 p.m., general meeting of the Congress, under the direction of "The American Orthopedic Association." Subject: "Deformities of the Hip-Joint, Especially Congenital Dislocations." A paper will be read by Dr. E. H. Bradford, of Boston, Mass., to be followed by a discussion by Dr. V. P. Gibney, of New York City, and Dr. Harry M. Sherman, of San Francisco, Cal. From 3.30 to 5 p.m., general meeting of the Congress under the direction of "The American Surgical Association." Subject: "The Classification of Acute General Peritonitis: The Prognosis and Treatment of the Different Varieties." Dr. William S. Halsted, of Baltimore, Md., will read a paper on "The Classification," and Dr. Robert Abbe, of New York City, on "The Prognosis and Treatment of the Different Varieties." A discussion will follow, participated in by Dr. John Homans, of Boston,

Mass., Dr. A. Van der Veer, of Albany, N.Y., Dr. Henry H. Mudd, of St. Louis, Mo., Dr. Frederick Lange, and Dr. Arpad G. Gerster, of New York City.

OBITUARY.

JAMES HARLAN REID, M.D., C.M.—Dr. J. H. Reid, a promising and successful young physician, who had been practising for some years, died January 15 from pleurisy. Dr. Reid was educated in the Toronto School of Medicine, and graduated in the University of Victoria College in 1879.

WILLIAM JOHN MITCHELL, M.D.—Dr. W. J. Mitchell, a popular and successful young physician of London, Ontario, died last month after a short illness from pneumonia. He graduated in the Western University, 1885, then commenced practice in London. He was a member of the staff of the medical faculty of Western University, and was also surgeon to the Seventh Battalion.

ROBERT TODD REYNOLDS, M.D.—Dr. R. T. Reynolds, who lived and practised for many years in Berlin, Ont., died at the residence of his son-in-law, Chicago, February 28, aged 85. He was born in Amherstburg, and received his medical education in McGill University, of which he was for some time before his death the oldest living graduate, having received M.D. from that institution in 1833.

RICHARD MILNE STEPHEN, M.C.P. & S.O.—Dr. Richard Stephen died at his home in Manitowaning, Algoma, March 10, 1897. He was a son of Dr. A. R. Stephen, of Collingwood, and received his medical education in Trinity College. He was house physician in the Toronto General Hospital for nearly a year. He was a victim of tuberculosis for some years, which disease caused his death.

ROBERT MARK, M.D.—Dr. Mark, coroner for the county of Carleton and city of Ottawa, died of pneumonia February 22, 1897. He received the degree of M.D. from Victoria in 1867, but he spent the greater part of his life as a clergyman in the Methodist Church. He was superannuated thirteen years ago, and after that time practised medicine to some extent, and did a good deal of work as a coroner.

WILLIAM W. BREMNER, M.D.—Dr. W. W. Bremner died in Los Angeles, California, March 12, 1897, aged 44. He was born in England, but came to Canada when quite young, with his father. He resided in the vicinity of Barrie, where he received his preliminary education. He graduated in the University of Toronto in 1882. After practising for a short time in Barrie he went to England, and after staying a few months in London commenced practice in Manchester, his birthplace. In a few years he returned to this continent, and spent nearly two years in New York, working chiefly in orthopædic surgery. He then came to Toronto and practised as specialist in this subject for four years. As

his health became poor he decided to try a warmer climate, and left Toronto about two years ago for California. We know nothing as to the particulars of his last illness.

SIR THOMAS SPENCER WELLS, BART., F.R.C.S.—The man, who a few years ago was rightly considered as the greatest ovariologist in the world, has gone to "the majority." Spencer Wells was a great man, and was one of the surgeons of the world whose name in the future will be linked with that of Lister, and a number of others who did much for surgery and for suffering humanity in the latter half of the present century. Wells was born at Hertford in 1818, and received his medical education chiefly in Dublin and London. In 1838 he studied in Dublin under Graves, Stokes, and others; in 1839 and 1840 he worked in St. Thomas' Hospital, London, under Green, Travers, and Tyrell. In 1841 he became a Member of Surgeons, and entered the Royal Navy as assistant surgeon. He served in the Naval Hospital at Malta for nearly six years. He commenced practice in London in 1853, and was elected surgeon to the Samaritan Free Hospital in the following year. During this year (1854) the Crimean war broke out, and Wells went off to the seat of war, where he was engaged in military surgery for about two years. Two years after his return to England he commenced to rise to fame.

In 1854 he witnessed his first ovariectomy performed by that great, but unfortunate surgeon, Baker Brown. The patient died. Brown was discouraged; Wells also. Afterwards, however, in the Crimea, he discovered that the peritoneum would bear very rough handling. As we are told by the *British Medical Journal* he learnt that the abdominal walls might be extensively lacerated, the intestines might protrude for hours till they were covered with dirt, and yet, that after careful cleansing and accurate closure of the wounds, complete recovery was possible. He lost his terror about opening and handling the peritoneum. In 1857 he made his first attempt at ovariectomy, but was unable to remove the tumor. The spectators made discouraging remarks; the outside medical world sneered. Still Wells believed in great possibilities in connection with abdominal surgery. In 1858, when he was forty years of age, he did his first successful ovariectomy. His signal success thereafter in abdominal surgery is well known. Others operated before him, but Wells was practically the father of ovariectomy.

Three years ago, when travelling in India, he had an attack of influenza, with paralytic symptoms, especially affecting the speech, from which he never fully recovered. Three months ago he went to the south of France with two daughters. He had an apoplectic seizure on the morning of January 31, at Cap d'Antibes, near Cannes, and died the same evening at 11 o'clock. The body was cremated at Woking, according to his desire, on Monday, February 8th, and the remains were deposited at Brompton cemetery.

THE CANADIAN PRACTITIONER

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Original Communications.

OPIUM IN INDIA.

BY ROBERT D. RUDOLF, M.D. EDIN.,

TORONTO.

Mr. President and Gentlemen :

I HAVE no intention in this communication of discussing the pharmacology and therapeutics of opium, nor yet of mentioning the diseases in which it is indicated or otherwise, but would ask you to bear with me for a short time, while I give you the knowledge of the drug which I picked up while living in India. During the five years that I was there I resided in Behar, where the best Indian opium is grown and where many thousands of natives and a few Europeans are employed in the cultivation of the white poppy, (*Papaver Somniferum*) from which opium is obtained.

Just at this season of the year, when, after the cold weather, the climate is becoming tropical again, the little fields round thousands

of native villages will be white with poppy blossoms, and the heavy, sweetish odor from these is as characteristic of the season as the smell of a hay-field is of June. The fields are prepared in December with the greatest care by the native and his family, and when the ground is so fine that not a lump the size of a walnut remains, they mark the surface off into oblong beds about six feet by four feet, and the ridges between these beds are trenched to allow of the free passage of water, for all opium is grown by irrigation. This irrigation is usually from surface wells.

The seed is sown broadcast early in January, and in three or four days comes up. When the plants are about two inches high, most of them are weeded out by hand, and only one plant to every square foot or so is left. The irrigation is continued every two or three days until the blossoms fade and the heads appear. When fully grown, the plant is about four feet high. The blossoms all come out nearly at the same time, so that a whole field, which was pale green one day, is white the next. The petals of the blossoms are collected by gently removing them by hand from the capsules, never plucking them off forcibly, as this would injure the latter. These petals are then handed over to the women of the family, who, seated in front of circular iron plates placed over a slow fire, dab the petals on one by one, pressing them with a damp roll of cloth. When fresh, the petals are gummy, the heat makes them stick together, and the moisture being driven out they form circular cakes, technically called "leaves," eight inches to fourteen inches in diameter and .5 to .3 inches thick, which are used in making the shells of the opium cakes at Patna.

Next the poppy juice must be collected, and this is a very critical operation, and all the native household is pressed into the service. Each person is armed with an instrument having two or three sharp points, so that one stroke of it makes two or three parallel scratches. Thus armed, they go into the fields in the afternoons, when the sap is rising best, and lightly scratch each poppy capsule on two or three sides in a vertical direction. This is a very tedious job when a man has several acres of poppy under cultivation, and all the village, from old men and women who can scarcely stand, to children who have barely learned to do so, are pressed into the work. The work is urgent, for a whole field becomes ready for the extraction about the same time, and it must be all accomplished in a very few days, or the capsules will dry up and much of the juice will be lost. When the capsule is lanced, a white juice about the consistency of glycerine slowly exudes, and this partially dries and turns brown.

Next morning the harvesters return and scrape off the crude opium this they smear on to the palms of their hands, and when they have got together a good collection, they put it into earthenware dishes. This collecting is done with blunt knives like bits of hoop iron. Each set of incisions in a capsule yields about $1\frac{1}{2}$ grains of crude opium, and the scarifications are repeated several times—until the juice ceases to flow. As thus collected, opium is a granular, rose-red liquid containing 40-51 per cent. of moisture. The poppy plant now rapidly fades and is soon cut down and broken up, and is sent in to be used for packing opium cakes. The seeds are pressed for poppy oil, or are kept for the next year's sowing. After pressing, the residue is used as food for cattle. The land is at once cultivated again and probably indigo is sown—what strikes one specially in Indian agriculture being that the soil is given no rest, one crop following another in constant succession.

The opium trade of India is a government monopoly, and is worked by a department of Europeans, assisted by a great number of minor native officials. These grant licenses to the cultivators, without which they are not allowed to grow the poppy. They also advance money to enable the cultivators to meet the expenses of preparing the land, etc. They measure all the land after it has been sown with poppy, and thus check any cheating, in that a native cannot get an advance on a greater piece of land than he actually cultivates. All the opium that is collected must be taken by the natives to the government go-downs (or warehouses), where it is weighed and carefully examined to see that it has not been adulterated. In spite of this barrier, adulteration is a common thing and the substances used for this purpose are very numerous, of which gum acacia, bael, betel, the juice of several milk-yielding trees, raw sugar, ghee (boiled butter), flour, linseed, brick dust, and even cow dung may be mentioned.

The examiners at the warehouses become very skilful in detecting adulteration by the senses of sight, touch and smell, and use no chemical tests there.

All the opium is, at the warehouse, roughly divided into three qualities, according to its consistence—the most solid being the best—and the value is placed to the credit of the grower, and he is paid that amount in cash, less the advance, which he received earlier in the season. The officials then put the opium into great earthenware jars, each containing eighty pounds, and these are carefully sealed, and then sent by boat or train to headquarters at Patna under a guard of police.

Arriving here, the opium, after being carefully check-weighed, is searched and again classified, first by hand—and the men to do this work can from long experience tell to one degree the consistence of any specimen—and then is classified again on a steam table.

Dr. Manyard, the officiating factory superintendent, thus describes this second examination :

“ These tables are shallow iron chambers, inside of which steam circulates, and on top of which rest white china plates. A specimen of a hundred grains of opium dried to a powder on these shows by its loss in weight the amount of moisture it contained. Thus, if 100 grains result in 80 grains, we say the consistence of that opium is 80°, *i.e.*, it contains 20 per cent. of moisture, and it is on this consistence that the assami is paid. The same weight of opium at 80°, of course, being more valuable than at 50°. Every specimen in addition to the assay is also carefully tested for impurities, and not until a certificate of purity is received back from the laboratory can any single jar of opium be passed into the *malkhana* storing vats, where opium of different classes (each class including 3° of consistence) is stored in different vats. Each class bears a distinctive name, thus *awal* includes opium of consistence, 70°, 71°, and 72°, *darawal*, 73°, 74°, and 75°, and so on. This classification and examination of the opium takes place in April, May, and June—as many as 1,200 and even 1,800 jars (maunds) being disposed of daily. Good opium, as thus received at the factory, is a moist, granular, rich mahogany-brown colored substance, varying in consistence according to the inspissation it has undergone, from that of thick pea-soup to that of putty; the consistence also rising with the amount of *pasevha* present. The color varies with the age of the opium (darkening with age), amount of *pasevha* (darker the more there is), soil on which grown (lighter from high land only recently cultivated), but is never black unless adulteration has occurred. The texture varies from the distinctly granular to the homogeneous, but when the opium is pure is always uniform. Its variations depend upon the amount of *pasevha* present, but more especially upon the manipulation the opium has undergone, the grain being destroyed by prolonged manipulation. The texture is usually determined by taking a specimen in the palm of one hand and spreading it out with the fingers of the other, or with a spatula. Pressed between the finger and thumb, opium is sticky and viscid and draws out in fine threads, which break with a ragged fracture, and by the appearance of these the Chinese in part judge of the nature of the drug. The smell of fresh opium is strong and peculiar, rather agreeable, fruity it has

been called, and with less justice narcotic, as it rather stimulates than narcotizes, at any rate when first smelt. Its taste is also peculiar and bitter. Pressed between two glass slides, it is translucent and of a reddish-brown color. The same result may be obtained by smearing a piece on a white china plate with the finger when any blackness or grittiness indicating adulteration is at once revealed.

"Starch is also said to be detectable by the naked eye in these ways, and no doubt can when present in a very large amount, but it is unreliable.

"Microscopically opium macerated in glycerine shows as a brown amorphous or granular substance in which are to be seen large crystals—either single tablets with pointed ends resembling ammoniaco-magnesian phosphates (as figured in Sir W. Roberts' book on Urinary Diseases) or in tufts resembling stars of uric acid. There are also flat, square, tabloids. A few starch grains resembling arrowroot or tapioca, may generally be found, also refractive globular bodies said to be resinous, and now and again particles of vegetable fibre."

In addition to this opium, there are a number of varieties sent in, *e.g.*:

(1) *Khurchan*, which is the scrapings from the earthenware dishes of the natives.

(2) *Pasewha*, that is, an acrid kind of opium, which rises in the capsules during an east wind, and which, although very pure opium, is disliked because it is hygroscopic, and hence unfit for the interior of opium cakes.

(3) *Kuffa*, that is, pieces of cloth which have opium adherent to them. If clean, the opium is washed out and used for alkaloidal manufacture, otherwise it is confiscated and burnt.

(4) *Burned Opium*, usually from accident.

(5) *Contraband Opium*, seized in Bengal or Assam.

(6) And lastly, *Adulterated Opium*.

All opium at Patna is specially prepared to meet the three uses, (1) provision for the China market ; (2) excise opium for use in India ; (3) medical opium. This last is of two kinds—cakes and powder—and is made from opium of highest consistency and lightest color. It is spread out on shallow wooden trays in the shade, carefully protected from the dust, and kneaded by hand every few days until it rises to 90° consistence. This takes months to effect, and it is then pressed in a hand-press into cakes of two pounds weight each, wrapped in Nepaul paper, and issued to medical store-keepers. The powder is simply opium dried to a powder on plates on the steam table, and is pure opium at 100° consistence.

The opium for use in China and India is sent out at the standard strength of 75° (25 per cent. of moisture). It is made into balls weighing two pounds each, and these are packed in boxes among opium plant straw. This opium is despatched to Calcutta and there sold to Chinese and Indian buyers at the monthly Board of Revenue sales.

Opium, not suitable for any of these three purposes, confiscated opium, and *pasewha* is all sent to Ghazipur, where it is used for the extraction of alkaloids.

As regards the *composition* of Indian opium, it is peculiar in containing less morphine and more narcotine than the Smyrna variety. It contains more morphine than Chinese or Persian opiums, and much more narcotine. This excess of narcotine in Indian opium is well worth noting. Narcotine has a more convulsive and less narcotic action than morphia. Squire, in his *Companion to the British Pharmacopeia*, states that it has no narcotising action at all, and hence has been sometimes called Anarcotine.

Bihar, that is, Patna opium, when thoroughly dried, contains 5.16 per cent. by weight of morphine against 9.64 in Smyrna opium. On the other hand, Patna opium contains 8.24 per cent. by weight of narcotine, and Smyrna opium only 2.26 per cent.

The opium belongs to the Government from the first, and a large staff of officers are employed to prevent the local sale and use of it by the cultivators. But with all these precautions, a certain amount is used thus, and the presence of the dish of opium in the hut not infrequently tempts natives—usually women—to steal enough to do away with themselves. It is also a fairly commonly used poison in cases of murder, although arsenic is the commonest here.

A good crop of opium is the most profitable one that can be grown by the villagers, but the risks are many, and it is seldom that a man secures a perfect 16 anna harvest. A 16 anna means a perfect one from the idea that there are 16 annas in the rupee. A 12 anna crop would thus be a 75 per cent. one.

But the poppy plant is a very delicate one and its life and development are endangered by many things. Thus the ground must be very rich and contain a good deal of natural moisture or the seed will not germinate. When the plants are above ground, a cold spell of weather may kill them. Later on the blossoms may be destroyed by hail, heavy rain, or high wind; but the most risky time of all is when the capsules have been lanced and the opium is lying on the surface. Then a heavy rainfall will wash most of it away, or a high

wind blowing the plants about may rub them against each other and knock quantities of the opium off. Thus a native who trudges home with the price of a good crop tied up in his loin cloth may truly breathe his thanks to his gods, and probably will offer up some simple sacrifices to their images. If, on the other hand, he has received little or nothing, or even is in debt to Government for part of the advance he has already got, he will quietly make his way back to his village, muttering "*kismet, kismet*" (fate, fate), for the native of India is a great fatalist.

The two great races in India, Hindoos and Mohammedans, use opium largely as an habitual stimulant, as a necessary part of many social ceremonies, as a prophylactic against disease, and as a therapeutic agent.

The exact date on which opium was introduced into India from Asia Minor is doubtful. Some believe that the Rajputs (who are high caste Hindoos) used it over 2,000 years ago. There is no evidence, however, of the plant being cultivated in India before the sixteenth century, and it was probably then introduced by the Arabs, who also took it first to China.

(1) The *use of opium* has been for long intimately connected with the *social functions* of many classes of Indians. Dr. Norman Chevers, in his "Medical Jurisprudence of India," tells us that *Amal-lar-khana*, "to eat opium together," is the most inviolable pledge amongst the Rajputs, and an agreement ratified by this ceremony is stronger than any adjuration. If a Rajput pays a visit, the first question asked or words uttered are *Amal kya*, "have you had your opiate." On a birthday, when all the chiefs convene to congratulate their brethren on another link being added to the chain of years of their age, a large cup is brought forth, a lump of opium is put therein, upon which water is poured, and by the aid of a stick, a solution is made, to which each helps his neighbor, not with a glass, but with both of his hands held to the mouth. The practice of *Amal-lar-khana* was also a social indication that all enmities were at an end; it was the seal of renewed friendship between individuals or tribes among whom hostilities had previously prevailed.

In July, 1892, the Calcutta Medical Society held a discussion on the use of opium, in which several native medical men spoke of its social use. Dr. Chunder Bose, the president of the society, spoke as follows :

"I cannot find from records when the drug was introduced as a social necessity in this country, but I am in a position to state that opium is indispensable in the reception of chiefs, nobles, and men

of rank amongst the Rajputs, the Marwarees, and the Mohammedans of the central provinces, and of Surat and Ahmedabad. The process of welcoming guests with opium, either in the form of decoction or highly-scented extracts, is called *Kussoba*. The host himself takes the gold or silver cup filled with the preparation of opium, and goes round the party, distributing spoonfuls to each one of his guests, who drinks it to the health of his host. Infants' and little children's right to the *Kussoba* is not denied by the host. The process is meant to remove anxieties from the mind and to bring about a state of hilarity.

"Different sects of people observe different modes of eating the drug ; some take it in its crude state, whilst others soak it in water or milk, and then drink the fluid and throw away the residue. The well-to-do class keep a separate formula for preparing their own opium ; they take a quantity of good opium, mix it up with the powdered seeds of cardamom, bamboo camphor, *Bangsolochun* musk, camphor and saffron to the consistency of a pill mass, and then make pills or boluses according to the dose which they take. These ingredients are added to the drug with the view of augmenting its virtues. The zemindars and the rajas and nawabs of Bengal boil opium in milk, and then they eat the cream only. The process of smoking *madat*, otherwise called *goolie*, is simple, whilst that of smoking *chandū* is involved and difficult. *Madat* smokers in this part of the country are of a low class, and generally shunned, whilst the *chandū* smokers are generally better off though of depraved morals."

Thus it will be seen that opium takes much the same position in social ceremonies in India as alcohol does amongst western nations.

(2) As an *habitual stimulant* the drug is very largely used amongst some classes, *e.g.*, the Marwarees (bankers) and Sikhs (fighting men) the practice is almost universal. In Behar itself, where opium is chiefly grown, about five per cent. of the Hindoos and thirty per cent. of the Mohammedans habitually use the drug in daily doses of from two to ten grains, and once the dose which suits the individual is reached it is not common for him to exceed it. Occasionally, however, one hears of enormous doses being regularly taken. There are people in India who take their two, four, six, and even eight ounces of solid opium daily, and one case was recorded by Dr. Crombie of a man who ate nine ounces and 225 grains daily, without developing any poisonous symptoms whatever.

It is taken usually in the form of the crude drug made into pills,

and half is taken in the morning and the rest at night, half an hour before food. The result is that the drug mixes with the food and thus is very gradually absorbed. When a native commences to take opium the effect at first is to cause constipation and a drying up of the secretions, but after a week or two of habitual use these untoward results wear off and the drug seems to actually stimulate peristalsis. The habitual taking of opium is usually commenced after the age of thirty, very often, to commence with, as a treatment for disease, and is then probably continued for the rest of the man's life. The effect of moderate use on the *native* seems, on the whole, a harmless one. The man, as long as he takes his dose regularly, is capable of the highest mental and physical exertion. If, however, his dose be withheld he suffers extremely.

Prolonged indulgence in the habit does not seem to produce any definite tissue changes which can be detected post mortem. As regards the effect on the brain, some interesting statistics were produced by Dr. Crombie, of Calcutta, for the use of the Royal Commission on Opium that sat some three years ago in India. I may summarize them as follows :

Of the total admissions of 2202 into the lower Bengal asylums during the ten years 1881-1890, 641 were ganja (Indian hemp) smokers, 117 were spirit drinkers, and eight were opium eaters. In other words, 29.1 per cent. used ganja, 5.3 alcohol, and only .35 were opium eaters. Of the 800 admissions during the three years, 1888-90, into the Bombay Presidency asylums, 132 were ganja smokers (16.5 per cent.), 56 (or 7 per cent.) were spirit drinkers, and six (or .75 per cent.) were opium takers—of these six cases attributed to opium, five were from the city of Bombay itself, leaving only one for the rest of the province and he belonged to Hyderabad, in Sind, where the opium habit is almost universal. In the Madras presidency during the year 1888, the total admissions were 168, and of these 7.1 per cent. were from ganja, 6 per cent. were alcoholics, and *none* took opium. In the Rangoon asylum, the only one in Burma, the total admissions for the six years ending 1890, were 541, of which 2.9 per cent. were attributed to ganja, 5.91 to alcohol, and .92 to opium. The city of Rangoon contains about 15,000 Chinamen, and yet not a single Chinaman was admitted to the asylum during these six years, although a large number of them smoke opium.

To summarize these figures : out of 3711 admissions to the various asylums, 801 cases were attributed to ganja, 215 to alcohol, and only nineteen to opium, and these figures are the more remarkable

when we consider how little alcohol and ganja are used compared to opium. Dr. Crombie remarked before the commission that, in his experience, it would be "almost justifiable to advance the theory that one of the advantages derived from the native habit of eating opium is a diminished liability to insanity."

As regards the influence of opium eating on longevity, Dr. Roy Moy Roy, himself an opium eater, has compiled a table of 215 habitual indulgers who had come under his own observation, and it is remarkable on looking through these tables to notice how many of the individuals have reached and exceeded the expectant period of life, as taken from English tables, and of course it must be remembered that the expectancy of life in England is considerably greater than in India.

The table includes one man who at the extreme age of 106 years died a violent death. He was in full possession of his senses and in good health considering his age, and used to manage a large estate of his own. His custom was to take 180 grains of opium daily, and this he had done for sixty-six years.

The Zantras—the religious books of one of the large sects of Hindoos—have authoritatively laid down that the practice lengthens life.

One great reason, it seems to me, why opium has been credited with tending to longevity is that it so often acts as a prophylactic to disease. When natives have to undergo any great physical hardship or exposure to cold and damp, they take opium, under the firm belief that it helps them to bear up under these difficulties.

The boatmen on the great rivers take it regularly, and they are a happy, healthy and contented lot of men. "They begin work at six a.m., and will often work a large, heavy house-boat, dragging it the greater part of the day against the current till eight p.m., on a hasty meal, snatched at midday, and an occasional chew of opium, all the time happy, jolly, and contented."

Dr. Moir, of Calcutta, says :

"Opium is taken very commonly with a view to lessen fatigue and hunger in prolonged hard work or long marches. The Bhutia and Gurkha coolies in Lushai land stipulated for opium in their rations, because they were accustomed to it ; because they believed it lessened fatigue in carrying heavy loads long distances in that hilly country, and because they thought it lessened their susceptibility to fever and did good in fever. The authorities wisely allowed them to have a fixed daily opium ration. I never saw any of these coolies suffering from any symptoms that could be attributed to eating opium, though I have seen some of them beastly drunk."

Smoking of opium is not very prevalent in India, but in some of the large towns it is practised. Either they smoke *chandū*, which is a watery extract of opium from which the oily matters have been removed by heat, or *madat*, which is also a watery extract pounded up with charred guava or vine leaves. The former method is practised by the better class, the latter by the lowest classes.

Pure morphia is little used by natives, but the Bengalee baboos of Calcutta have found it out, and many of them take this most insidious drug in doses of five to fifteen grains daily. As regards large doses of morphia, a Maharajah who died lately at a good old age, used to take twenty-six grains daily, and was a good sportsman and a first-class shot.

(3) As a *prophylactic*, opium is very largely used in India, as well as in other countries, and there seems no doubt that it does act in this way against malaria, rheumatism, dysentery, and cholera. As to the exact way in which it acts on the system in exerting its protective power one can only theorize, but the belief is well nigh universal in the East that an opium eater is less apt to suffer from these diseases than one who does not so indulge. This belief is not confined to the East, for opium is largely used in the fen districts of England for this very purpose, as stated by Dr. Lauder Brunton. In the *British Medical Journal* for July, 1881, Dr. Murrell draws attention to this fact, and points out that phthisis is very uncommon amongst these opium eaters.

Dr. Crombie wrote as follows :

"During sporadic outbreaks of cholera amongst the people of Burrobazar, the victims are those who are either abstemious in their habits or are bhang eaters and ganja smokers. The opium eaters who often closely attend upon patients, are not affected by the disease. A few months ago a party of twenty men, of all ages, one morning started from No. 9 Hanspooker Lane to Kalighat, to visit the goddess, and returned during the night. They prepared one kind of food, and all of them ate it. Early next morning nine of the party got cholera, and succumbed to it, whilst the rest escaped. On enquiry it was found that those who escaped were habitual opium eaters. But opium eaters, during the last epidemic of influenza, suffered most severely, and some succumbed to the disease."

During the Poojah season people come to Calcutta from the Terai of Jalpaiguri and Sotatia for treatment of Terai fever, and enlarged spleen. The history they give of their illness is interesting. They say that because they have not listened to the advice of opium eaters they are destined to suffer and to die prematurely, for in the Terai the opium eaters are the healthiest of men.

In the Central Provinces and Bombay pills of opium, the size of poppy seed, are given to the children from the first, and the dose is gradually increased to one grain. The practice is continued until the age of four years. From that age until after thirty opium is seldom used, except in the treatment of disease. It is thus given to children in the belief that it renders them less liable to tetanus and diarrhoea.

The prophylactic action of opium against malaria is probably largely due to the narcotine it contains. Narcotine, in doses of five grains or so, has often been used in the treatment of this disease.

Dr. Hehir, of Hyderabad, writes thus : "In malarial-poisoning there appears to be a hypersensibility of the general vaso-motor centre, so that a draught of cold air blowing on the surface, slight gastric irritation, or even slight distension of the bladder, will cause contraction of the cutaneous vessels, and shivering, in one suffering from such poisoning. Opium appears to be useful in such conditions, probably by lessening the excitability of the general vaso-motor centre. This exalted condition of irritability of the general vaso-motor centre is one very commonly met with in Hyderabad and its suburbs, and being the determining cause of many of the cases of ague met with, we may often ward off attacks of ague by giving *sedative* doses of opium to lessen those chemical, vital, functional, or metabolic changes (in the protoplasmic constituents) of ganglionic cells of this special centre) and thereby keep the blood at the surface, a condition incompatible with the manifestations of an attack of ague."

So much for the habitual use of opium by the people of India. The question naturally arises, how is it that the drug can be used with so much benefit and so little harm by these people, when the opium habit, or, at least, the morphia habit, is so easily acquired by Western nations, and is so dreadful in its results. One reason for this is, undoubtedly, that the opium of India (and also of China) contains much less morphine, but more narcotine, than do other kinds. But I believe that the great reason for the comparative innocuousness of opium on Eastern nations is that it is, so to speak, their *natural* stimulant. It seems as if every people must have some stimulant, speaking generally—take, for example, coca in South America, kola in Africa, and alcohol with western nations. And as long as they keep to their own stimulant, the minimum of harm (though often great harm) is done ; but if one nation adopt the stimulant of another, great havoc ensues, and the people seem unable to resist the desire to take an excessive amount of that stimulant.

Alcohol, fortunately is forbidden to most races in India, but where this is not the case and they substitute it for opium, the results are lamentable. Three years ago an attempt was made by a party in England to make it illegal for opium to be sold in India except for medicinal purposes. The Government Commission which sat in the country on the subject almost unanimously concluded that it was wiser to let things be. With this decision I agree, and hold that the harm and hardship caused by such legislation would far exceed any benefit which might accrue. If the natives of India must have a stimulant to assist them in their social functions, to help them through their daily work (in their opinion), and to protect them against disease, then by all means let it be the comparatively harmless opium, rather than the deadly ganja, or the still deadlier alcohol.

Selected Articles.

SERO-DIAGNOSIS OF TYPHOID FEVER.*

A STUDY OF ITS PRACTICAL CLINICAL VALUE, WITH A DEMONSTRATION OF THE BLOOD REACTIONS.

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SIX months have now passed since Widal first proposed and described a new method of diagnosing typhoid fever by means of an examination of the blood. During this period many clinicians and bacteriologists have repeated Widal's observations, and their published reports, so far as I have seen them, have all confirmed his conclusions as to the value and accuracy of the serum test. Early in November last the subject was brought to the attention of the physicians of New York by the action of the board of health, who offered to examine the blood of all cases of suspected typhoid fever occurring in either private or hospital practice in the city. Having at that time a number of cases of the disease in my service at Bellevue Hospital, I thought it an excellent opportunity to study the new test, especially as I had the aid of a zealous and most efficient house staff, that *sine qua non* of all good hospital work. Indeed, if I remember rightly, it was at the suggestion of Dr. Humphreys, the house physician of the first medical division, that we decided to provide ourselves with the apparatus and broth cultures necessary to performing the test ourselves. At the same time, we availed ourselves freely of the assistance so kindly offered by the bacteriologists of the health department. Careful records were kept of our investigations, as it was my intention at the time to present a report of our work to this society. In order that the principles underlying the test may be fully appreciated, I shall also give a short account of the experimental observations which paved the way for the discovery of

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Widal, as well as some consideration of the nature of the substances in the serum which produced the reaction.

Chantemesse and Widal were among the first experimenters in this field. In 1888 they succeeded in immunizing animals against the typhoid bacillus by injecting them with sterilized cultures of that bacillus. These observers found later (in 1892) that the same result could be accomplished by means of the serum of patients suffering from typhoid fever or convalescing from that disease. Then followed the observations of Pfeiffer and Kolle, who showed that the serum of typhoid convalescents or the serum of immunized animals, when injected into the peritoneal cavity of guinea-pigs at the same time with a virulent culture of the typhoid bacillus, had the property of immobilizing, agglutinating, and rapidly disintegrating the bacilli in the serous fluid. This reaction is generally known as "Pfeiffer's phenomenon" or reaction. The same serum, injected in like manner with cultures of the colon bacillus, had no such effect, the bacilli remaining isolated and later, Gruber and Durham observed the same immobilizing and agglutinating action upon typhoid bacilli outside the animal body, the mixture being made *in vitro*. There was no action upon the colon bacillus in any of its varieties. Again, Pfeiffer and Kolle showed that if the serum of immunized animals was added to bouillon in certain proportions, and the bouillon was then sown with typhoid bacilli there resulted, after twenty-four hours, a clear fluid with the bacilli precipitated at the bottom of the tube collected into small clumps. Colon bacilli, sown in the same bouillon, caused the usual clouding and preserved their motility. Pfeiffer and Kolle therefore recommended this procedure as a means of distinguishing between the typhoid and the colon bacilli. Widal carried these last observations one step farther, and found that the serum of typhoid patients had on cultures of the typhoid bacillus the same agglutinating action as the serum of animals immunized against typhoid fever. The serum of healthy individuals, on the other hand, or of persons suffering from diseases other than typhoid fever, had no such property. Having arrived at this point, Widal had only to reverse the terms of the problem and ascertain how the blood serum of a given individual acted upon a culture of the typhoid bacillus. If the addition of the serum produced immobilization and clumping of the bacilli in the culture, the individual had typhoid fever or had recently recovered from the disease. If the bacilli were unaffected, typhoid fever could be eliminated from further consideration.

The nature of the agglutinating substances in the serum is an interesting subject of speculation and study. It appears that various

fluids and secretions of the body possess the agglutinating power to a greater or less degree. It is very marked in the fluid of blisters. It has been found in the tears, also in the fluid of the pericardium, peritonæum, and pleura. It is sometimes present in the urine, but not constantly. The action was very marked in the milk of a nursing woman suffering from typhoid, but was not found in the blood of the infant nursed by the woman. The aqueous humor of immunized rabbits gave the reaction in five cases out of nine. Experiments by Widal seemed to show that the power is exerted by the fibrinogen and globulin of the blood, but is wanting in the albumin. On analyzing the milk of immunized goats, the power was found in the lactoglobulin, also in the casein, but was absent in the lactalbumin. Removal of the albuminoid substances, fibrinogen, globulin, and casein, from the body fluids of a case of typhoid fever, removes the agglutinating power from those fluids. According to Pfeiffer, the agglutinating substances are not antitoxines, but are bactericidal bodies, of the nature of ferments, in active and inactive form in the serum. Nothing is known as to the origin of the bactericidal substances, but Pfeiffer maintains that the leucocytes have no part in the process. Other observers have shown that if the immunizing serum be heated to a certain temperature it loses its bactericidal action without losing its power of agglutinating the typhoid bacilli. It is evident, therefore, that this special reaction is not dependent on the bactericidal property of the serum, but is due apparently to the presence of so-called protective bodies, and it is generally accepted that these protective bodies, the alexines of Buchner, are present to a greater or less extent in normal blood serum. Gruber not only believes that protective bodies are found in normal serum, but maintains that these bodies are the direct agents in killing the bacteria which enter the body. In his opinion, the specific substances which result from immunization simply aid the bactericidal action by destroying the outer covering of the bacteria, thus laying them open to the attack of the alexines of the normal body. Pfeiffer also, early in his experiments, found that normal human serum, in doses of three to eight decigrammes, exerted a protective action in guinea pigs of three hundred grammes weight, counteracting the effect of a fatal dose of typhoid bacilli. He holds, however, that the protective action of normal serum and that of serum from typhoid convalescents are not the same; the former simply immobilizes the bacilli and prevents their increase, if given in adequate dose; the latter destroys the bacilli by causing their dissolution or disintegration. There is, therefore, a qualitative as well as a quanti-

tative difference in their action. It is evident from the foregoing statements of various observers that normal blood serum contains substances which act strongly upon bacteria when the latter are introduced into the body. In the case of typhoid bacillus they are able to at least hinder its growth and activity, if not to destroy it. It remains to be seen whether this action is ever exerted outside the body when the serum and the bacillary culture are brought together in certain proportions.

Before proceeding to recount our own experiments I must refer to some recent observations of Courmont's, as they go to prove that Pfeiffer phenomenon or reaction is not of universal application. Courmont experimented with the serum of nine typhoid patients and found that it invariably gave a positive reaction with cultures of the typhoid bacillus; but it also reacted with the colon bacillus, sometimes very markedly. It also gave a distinct reaction with cultures of the Loeffler bacillus and of the *Staphylococcus pyogenes aureus*, but did not affect the *Bacillus pyocyaneus* or the *Streptococcus pyogenes*. The serum of patients affected with diseases other than typhoid fever had no action on the typhoid bacillus. Courmont therefore concludes that a culture of the typhoid bacillus can be used to determine whether or not a given specimen of blood has been taken from patient suffering or convalescing from typhoid fever—the test of Widal—but he also believes that the fact that the serum of a typhoid patient reacts upon a given bacillus does not prove that the latter is the bacillus of typhoid.

There are various ways of performing the test of Widal, but the principle is the same in all. As already indicated, the test consists in adding human blood serum in certain proportions to a recent culture of the typhoid bacillus, and noting the effect upon the motility and arrangement of the bacilli in the mixed fluid. The culture* should be only eighteen to twenty hours old in order to get the best results, the bacilli then being in active motion and the broth free from clumps. When sufficient fresh blood can be obtained to give pure serum for the test, the mixing proportions should be one part of serum to ten of the culture fluid. When dried blood is used, one part of serum to three or four parts of culture gives the best results, in my experience. Whatever proportion is adopted should be adhered to, in order that the resulting reactions may always have the same significance. In most of my work I have used dried blood

*The cultures employed in these experiments were made from laboratory stock cultures which had not been transplanted for some weeks. I note this fact because Dr. Wyatt Johnston has suggested that the false reactions reported by some observers were probably due to the use of stock cultures which had been made active and virulent by frequent (daily) transplantation.

taken from the finger with aseptic precautions. In two cases marked reactions were obtained from the fluid of blisters. The drop of dried blood should be dissolved with a drop of sterilized water, and the fibrin and coloring matter allowed to settle. With a platinum-wire loop four small drops of the culture are placed upon a clean cover glass which has just been passed through the flame. One drop of the clear upper layer of blood serum is then taken and mixed with three of the drops of culture, the fourth drop being left as a control. The cover glass is then inverted over the hollow cell of a glass slide and sealed with oil or vaseline. The hanging drop may then be studied with a quarter or one-sixth objective. I regard it as important to have a control drop on each cover glass side by side with the specimen. It is often desirable or necessary in cases of slow or doubtful reaction to turn to the drop of pure culture and see what changes are taking place there. The method of using dried blood and then redissolving it with water necessarily gives a serum of very uncertain strength. In the majority of cases the reaction is so clearly positive or negative that this rough method answers our purpose. In all doubtful cases, however, I should recommend the use of a blister. The blister fluid can be aspirated in small glass capillary tubes and obtained pure and then diluted to any required strength. Its freedom from fibrin and blood coloring matter is also an advantage. The blister can be made with cantharidal collodion or plaster and causes but trifling pain, as I can state from personal experiment.

The reactions which are observed in the mixture of serum and culture are generally described as either positive or negative, but, in my opinion, a considerable proportion can only be called "doubtful" or "partial." When most of the bacilli are immobilized and formed into clumps within five or twenty or thirty minutes, and the others have either lost their motility or retain simply a sluggish, uncertain movement, the reaction is properly classed as positive, or marked, or typical typhoid. On the other hand, if the activity of the bacilli persists and there is no clumping whatever, the reaction is naturally negative. But in many cases the motility of some of the bacilli is impaired while others remain active. There may also be some loose clumps, but the bacilli forming the clumps may still be in motion. It is, therefore, often impossible to call the reaction anything more than "doubtful." I shall have occasion this evening to describe actual instances of these various forms of reactions, and they will also be demonstrated under the microscope.

The cases forming the subject of our experiments may be divided

into three groups. The first and second groups comprise cases which had been under my own observation or with whose clinical history I was familiar before the examination of the blood was made. The third group is made up of cases of which I knew nothing at the time the specimens of blood were sent to me.

In Group I. are included fourteen cases of individuals suffering from typhoid fever or recently convalescent from the disease. In nine of the cases the blood was tested during the active period of the disease, in one case as early as the eighth day. The reaction was marked in all but one of the nine cases. The case which gave the reaction on the eighth day was a striking instance of the value of the test. The patient was a boy twelve years of age, who had been ill for a week with fever, cough, malaise, pain, and stiffness in the muscles of the neck, and slight diarrhoea, which had been apparently excited by a laxative given at the beginning of his illness. I was called to see him at his home in a tenement house. He had a temperature of 101° , a slight cough, and the signs of bronchopneumonia of the right side, but complained principally of the pain in the neck. There were no rose spots, but I thought I could feel the spleen. I examined some of his blood, and the reaction was so marked that I had him sent at once to the hospital. His disease proved to be typhoid of a rather mild type, and the blood gave a positive reaction as long as he remained under observation. I have here a dried specimen of his blood, which still responds to the test, though it was taken from the finger over four weeks ago. I saw the patient to-day, two weeks after he left the hospital, and find that his blood now reacts less than the old dried drop of four weeks ago.

Another case in which the test proved of value was that of a patient who had been in the hospital for eight days without our having been able to arrive at a positive diagnosis. The patient entered the hospital on the 2nd of November with a history of a three weeks' illness, sudden in its onset. His condition on the day of entrance suggested typhoid fever, but his symptoms during the next few days were not what one would look for in the fourth week of the disease. On the 10th of November some of the blood was sent to the Board of Health for examination, and a marked reaction was reported. The further course of the disease sustained the diagnosis of typhoid fever, and repeated tests of the blood gave uniformly a positive result. It is probable that in both of these cases a diagnosis would ultimately have been made from the clinical signs, but the blood-serum test saved us several days of uncertainty.

One case only of the nine, in a private patient of Dr. Henry W.

Berg's, has given an absolutely negative reaction, though the blood has been examined four times from the tenth to the twenty-second day of the disease. The other six of the nine active cases were well advanced when the blood examination was made, and the positive result of the test simply confirmed the previous diagnosis. The dried blood of two of these cases, taken from the finger some seven weeks ago, still gives a marked reaction.

In the remaining five cases of Group I. the test was not made until convalescence was established. In three the result was positive, the interval since recovery from the fever being two months in two cases and ten months in the third. The two negative cases were examined after an interval of five months in one case and sixteen months in the other.

Group II. includes forty-eight cases of individuals either in good health at the time of the serum test or suffering from diseases other than typhoid fever, such as lobar pneumonia, malarial fever, tuberculosis, chronic nephritis, cirrhosis of the liver, puerperal sepsis, eclampsia, acute mania, melancholia, alcoholism, leprosy (three cases), scarlet fever, diphtheria, acute rheumatism, diabetes (three cases), as well as various minor ailments. The great majority of these cases failed to react at all to the serum test. In three, however—all patients in Bellevue Hospital—there was a partial reaction, never complete and unmistakable, but still as marked as is sometimes obtained in typhoid fever. The first of these doubtful cases was that of a negro named Chase, with cirrhosis of the liver and ascites. He stated that he had had no fever of any kind during his twenty years residence in New York. His blood has been examined repeatedly, sometimes with negative result, at others with a doubtful reaction. The two other patients were also of the African race, one with nephritis, the other, in a woman, with puerperal sepsis. Only one test was made in each case. Three other negroes in the hospital gave no reaction.

Thinking that perhaps negroes were more or less immune to typhoid fever, I went last week to the Colored Home and Hospital, and, with the kind assistance of the superintendent, Dr. Bickerton, I obtained blood from twelve of the patients. One only, however, of the twelve gave a moderate reaction, a patient with diabetes. I was told by Dr. Bickerton that they had not had a case of typhoid fever for fifteen years. But this may be partly due to the fact that patients with acute disease are rarely brought to the hospital, owing to the lack of an ambulance service. In my own experience in New York I do not recall a case of typhoid fever in a negro of pure blood. I have

consulted the United States census tables, as well as the reports of the Charity Hospital in New Orleans, and have found a somewhat lower rate of mortality from typhoid fever in the colored race than among the white population.

There were thirty white persons in this group, and not one gave a positive reaction to the test, with the exception of a patient with necrosis of the tibia, who had had typhoid fever one year previously. Four of these persons were individuals who had had a fever of uncertain character a few months before the examination of the blood. The test was made in their cases in order to determine whether or not the previous illness had been typhoid fever. Had the result been positive, it might have been taken to indicate that the previous disease was typhoid in character; but the negative result cannot be said to absolutely exclude typhoid fever, in view of the possible rapid disappearance of the agglutinating bodies in the blood, as shown by the result of some of the tests in the convalescent cases in Group I.

The greater part of the cases in the two groups just considered were those of patients in Bellevue Hospital, and they were examined during the month of November, when Widal's test was new to all of us in New York. In addition, as I have said, the clinical features of the cases were known before the blood was tested, and it is impossible, in work of this kind, not to be somewhat influenced in one's judgment of a doubtful reaction by previous knowledge of the case. I must add, however, that all of the typhoid fever cases, as well as the doubtful cases among the non-typhoid patients, were passed upon by Dr. William H. Park, and his results were the same as those given above. The only undoubted typhoid case which failed to give a marked reaction was the case of Dr. Berg's, and that case is still under observation. By good fortune I happened to preserve the dried blood of four of the other eight active fever cases, and the reaction may still be observed. I have also the original specimen from the first negro that gave a doubtful reaction, and it is interesting to note that it fails now to react at all to the test.

At this point in my investigations it occurred to me that it would be well, as a sort of control to the above observations, to apply Widal's test to the blood of persons whose clinical history was unknown to me. Dr. Frank W. Jackson, who succeeded me in the service at Bellevue Hospital on the 1st of December last, has kindly aided me in this plan, and, thanks to him and to the house staff of the first medical division, I have received from thirty to

forty specimens of blood taken from selected patients in their wards. My third group is composed of these cases, and of a few others obtained from different sources. With very few exceptions, all of the specimens were submitted to the judgment of Dr. Park, who not only is an expert bacteriologist, but has also had more experience in the serum diagnosis of typhoid fever than any one else in New York. My object was not to test my qualifications in this new line of research. My experience during the month of November had convinced me that it was not advisable for the practising physician to pursue this method of diagnosis at the bedside. I wished to ascertain whether, with the aid of a bacteriologist, the clinician could determine whether or not he was dealing with a case of typhoid fever in the absence of the usual signs of that disease.

It is not necessary to describe in detail all the observations included in our third group of cases. I may say at the outset that in the main the clinical and the bacteriological diagnosis were in agreement. In Group I. we have seen that one patient out of nine with typhoid fever failed to respond to the Widal test as late as the twenty-second day of the disease. In Group II., of forty-eight cases which were not typhoid in nature four gave a partial reaction. In Group III., in addition to several instances of doubtful reaction there are three cases in which the result of the serum test has not supported the clinical diagnosis. One case (Lang's) of well-marked typhoid fever has repeatedly failed to react to the test though it is now in the fifth week of the disease. Daily examinations of the blood have been made, and the reaction has been negative or doubtful throughout. Another case (Durphey's), which has not a single typhoid symptom, has given a marked reaction from day to day during the past two weeks, the first examination, three weeks ago, having been negative. I have brought specimens to-night of the blood of both of these patients, and I find myself in the rather novel position of showing the so-called typhoid reaction with normal blood serum, and, on the other hand, of demonstrating the failure of the reaction with the blood of a typhoid patient. An interesting feature of the first case (Lang's) has resulted from the fact that three days ago we were able to obtain some blood from the spleen, and Dr. Park has succeeded in isolating the typhoid bacillus from a culture of this blood. The case, therefore, is bacteriologically, as well as clinically, typhoid fever, in spite of the failure of the test of Widal. A third case, non-typhoid, gave a marked immediate reaction on one day, the 19th of December, but has been negative ever since. It hap-

pened that he, as well as Durphey, had been given thirty grains of quinine on that day, some hours previously to the taking of the blood. As this was the first occasion on which Durphey had reacted positively, it was thought that possibly the reaction in both cases was due to the quinine. The drug was therefore given to six patients as an experiment, but the blood was apparently unaffected in any of the cases. I must not neglect to add that both Durphey and Bucklander are negroes.

In order to test the bacteriological accuracy of the serum test when performed by competent men, I sent last week to four well-known bacteriologists of New York specimens of blood taken at the same time from three different cases. I selected for this purpose Chase, the negro with cirrhosis of the liver; Durphey, the non-typhoid case with typhoid reaction; and Lang, the typhoid case with negative or doubtful reaction. The specimens were simply numbered, with no clue to the nature of the cases. I have received three reports in reply, and the results are the same in all. Chase is returned as "negative," Durphey as "positive" or "typical typhoid," and Lang as "doubtful" or "imperfect" reaction.

I shall quote in full one of these reports as an illustration of the care and thoroughness that are exercised in this sort of work.

The tests were made with a twenty-four hours' growth of Eberth's bacilli on agar—bacilli very motile and evenly distributed through hanging drop. Results noted at intervals as recorded below:

Specimen B. H. 31 (this is the case of Lang). Examination No. 1.—Five minutes: Bacilli very motile, and no evidence of agglutination.

Fifteen minutes: Motility somewhat diminished, but no well-marked clumping.

Thirty minutes: Some of the bacilli motionless and formed in loose clumps with bacilli in slight motion. Free bacilli very motile.

Sixty-five minutes: Clumping more marked, but bacilli forming the clumps are not entirely motionless. Some of the clumps not stable, and when clump breaks up majority of bacilli are very motile.

Forty-eight hours: Bacilli motile where free. In portions of drop some loose clumping.

Same Specimen. Examination No. 2.—In this examination a smaller amount of water was added to dried drop of blood and more of serum added to diluted culture.

Five minutes: Bacilli not as motile as in control specimen;

scattered through the field, three to eight bacilli in loose clumps, and motionless. Free bacilli motile.

Fifteen minutes: Motility of all the bacilli impaired, and the loose clumps of bacilli more numerous.

Forty-five minutes: No change in reaction.

Twenty-four hours: Bacilli have very little motion.

Arrangement of clumps same as above.

Conclusions.—Would not consider the reaction *typical* of typhoid.

When the strong serum was used it would be classed as doubtful or "imperfect" reaction.

Specimen B.H. 39 (this is the case of Chase). Examination No. 1.—Conditions same as for B. H. 31, examination No. 1.—Five minutes: Very active. Motility seemingly increased; no attempt at agglutination.

Fifteen minutes: Motility equals that of control specimen; no attempt at agglutination.

Thirty minutes: Motility markedly impaired; no clumps formed.

Sixty-five minutes: Some of bacilli are motionless, in others there is diminished motility. Some aggregation of bacilli, but can not be called "clumping."

(Control specimen showed no change at this time.)

Same Specimen. Examination No. 2.—Conditions same as B.H. 31, examination No. 2.—Five minutes: Some loss of motility, but no clumping.

Fifteen minutes: Marked loss of motility, but no clumping.

Thirty-five minutes: Motility same as above, and a few bacilli loosely collected together, but not entirely motionless.

Sixty minutes: Many of bacilli motionless, lying free in drop; others motile in but a slight degree. Some small groups of bacilli are motionless, but can not be considered agglutinated or clumped.

Two hours: Same as above stated. Reaction negative.

Specimen B. H. 35 (this is the case of Durphey).—Conditions same as in B. H. 31 and 39, examination No. 1. Five minutes: Motility inhibited, bacilli collected in large clumps; spaces between clumps free from individual bacilli.

Fifteen minutes: Same as before.

Thirty minutes: Same as before.

Sixty minutes: Same as before.

Twenty-four hours: Same as before.

Small quantities of this specimen gave marked reaction.

Would consider the reaction typical of typhoid.

This report of these three cases shows what nicety of judgment is required in arriving at a decision in a case of doubtful reaction, and it is quite possible that occasionally two observers may differ in their interpretation of the same specimen. As a rule, however, I think we may depend upon the bacteriological accuracy of the test. But what shall we say of its clinical significance, so far as we can judge from the observations that have been detailed this evening? A brief review of the cases will aid us in answering this question, and also enable us to formulate certain general conclusions. In Groups I. and III. there were, in all, twenty cases of undoubted typhoid fever in which the blood was examined during the febrile stage. In two of these cases the test failed, even as late as the third and the fifth week of the disease. In one of the two cases (Lang's) the reaction has varied from day to day, being sometimes negative and sometimes doubtful, and I think it probable that his blood will yet respond to the test.* As an aid to diagnosis, however, the test can not be said to have proved of any value in these two cases; in fact, the negative result was absolutely misleading. On the other hand, of some eighty odd cases, non-typhoid in character, one case gave uniformly a positive result; a second case reacted positively on the first examination, but was negative on all subsequent tests. In several other cases the reaction was doubtful. In a total, therefore, of one hundred cases the results of the serum test failed to agree with the clinical diagnosis in four instances; in a number of other cases the reaction was uncertain or doubtful in character. In about ninety cases out of the hundred the reaction was decided, and its accuracy was proved by the subsequent course of the disease.

Conclusions.—(1) In the large majority of cases of typhoid fever the blood serum will give the so-called typhoid reaction at some time during the active period of the disease. In a small proportion of cases, perhaps ten per cent., the reaction will not be obtained, if at all, until the diagnosis has already been made from the clinical evidence.

(2) In cases apparently non-typhoid in nature, a positive reaction may occasionally occur, but probably not oftener than in one or two per cent. of the cases. This pseudo-reaction is to be attributed to the protective bodies which, as we have seen, are present to a greater or less extent in normal blood serum.

* Two weeks after this paper was read a positive reaction was given by the blister fluid of this patient, convalescence being apparently established. The blood serum, however, still failed to react. One week later the patient had a relapse, and a reaction was obtained from both blood serum and blister fluid.

(3) In a varying proportion of cases, both typhoid and non-typhoid, a partial or doubtful reaction takes place. Repeated tests are then required in order to determine whether the reaction is due to the normal protective bodies or to the specific properties of typhoid blood.

(4) The serum test of Widal is a most valuable aid in the diagnosis of typhoid fever. With greater experience and improved technique its value will in all probability become even greater and more clearly defined. For the present, however, the test should not be relied upon alone, but should be taken together with the clinical signs of the disease.—*N. Y. Medical Journal*.

Clinical Notes.

VOLVULUS—OPERATION—RECOVERY. ECTOPIC GESTATION, VERY EARLY RUPTURE—COLLAPSE—OPERATION—RECOVERY.*

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VOLVULUS—OPERATION—RECOVERY.

Mr. G. first had an attack of abdominal pain and obstruction of the bowels. Was attended at the time by Dr. A. R. Gordon. Dr. Gordon tells me that at this time he considered the case was one of volvulus, but the difficulty was overcome by enemas. Bowel was evidently straightened out, and the patient made a good recovery. Four or five years after this patient was working on Friday, and lifted some boxes. He felt some pain in the abdomen, and was unable after this to get any movement of the bowels. On Saturday the pain continued, and his wife endeavored to give him an enema, but the fluid returned. It was impossible to get the bowel filled with fluid. On Sunday the pain became intense, and Dr. Webster was sent for. He saw the patient at 9 p.m., and endeavored to give him an enema. After using a tube about a foot and a half long two quarts were retained in the bowel. This fluid evidently went up beyond the twist and remained there. On Monday the patient was found with the abdomen distended, the pain continuing, and distinct evidence of attempted peristaltic action of the intestine down to a certain point. Some blood and mucus were passed per anum. The patient was taken to the Western Hospital, and I saw him on Monday morning, in consultation with Drs. Webster and Carveth. At this time the abdomen was considerably distended. The patient's face looked pinched and anxious. His pulse was 90, temperature $98\frac{1}{2}^{\circ}$. A distinct coil of distended intestine could be seen

* Read before the Toronto Medical Society.

lying in the abdomen with its two ends approximated in the neighborhood of the left iliac region. It was evidently very fully distended with gas. I advised immediate operation. As soon as the patient could be satisfactorily prepared operation was performed.

The abdomen was opened in the median line, and immediately a large coil of distended intestine popped out and stood up like so much erectile tissue. Its apex was about from ten to twelve inches above the surface of the abdomen. It was quite evident that this was volvulus of the omega flexure of the colon. Two half twists, or one complete twist, from right to left loosened the constriction so that a long stomach tube could be passed up into the distended bowel from the rectum. This was carried out by the nurse, and I manipulated the tip of the stomach tube so as to expel the gas from the distended gut, and thus produced flaccidity of its walls. After the intestine was collapsed the mesentery at three or four points along the mesenteric edge of the bowel on its upper and left surface was stitched to the peritoneum beneath the wound. The longitudinal muscular band on the anterior and left surface of the colon was perforated with two or three stitches at varying distances, and these were fastened to the peritoneum. The material used was fine silk. The abdominal wound was then closed with silkworm-gut sutures, and dressed in the usual way. The patient made an uninterrupted recovery.

During convalescence a large number of cherry pits, that had been lodged in the volvulus, passed away in the motions.

VERY EARLY ECTOPIC GESTATION—COLLAPSE—OPERATION—
RECOVERY.

Mrs. S., æt. 28. One child fifteen months old. Menstruated once after birth of child, then went five weeks, that is, up to the time she was taken ill with the symptoms of the rupture. There was no uterine hæmorrhage in the interval nor at the time of the rupture. Patient doing her work as usual until between three and four o'clock in the afternoon, when she felt pain in the side. Had no idea there was anything wrong with her up to this time. A frequent desire to pass water came on. She got up to move about and fainted. She then lay down again, and endeavored two or three times to move around, but, faintness coming on, she was unable to do so. The pain then disappeared, and she felt as if there was not much the matter except that she was weak. The neighbors, however, became alarmed, and advised her to send for the doctor. This was done at 11 p.m. of the same day.

Dr. Rowan found her suffering from considerable precordial uneasiness. She looked pale ; was bathed in cold perspiration and felt extremely weak. She was pulseless at the wrist. The pain in the abdomen had disappeared. I was telephoned to at a quarter to twelve and arrived at the house at a quarter to one in the morning. I found the patient pulseless, though the heart was beating 100 in the minute. As it is frequently expressed, "the bottom had fallen out of the pulse," so that it could not be felt at the wrist. The patient looked blanched, and it only took a few seconds for me to confirm the diagnosis of the attending physician, Dr. Rowan. Urine had been passed before the onset of the symptoms, but none passed since. I have frequently noticed this suppression of the urine in these cases. The abdomen was slightly distended. By percussion intraabdominal fluid was diagnosed. The dulness was slightly moveable with change of position, as frequently happens when the abdomen is filled with blood, more or less clotted. The patient was lying in bed with her clothes on just as she had fainted in the afternoon.

I made a vaginal examination. Could feel no mass on other side of the uterus but thought I could feel blood clot break down under the finger when pressing against the downward bulging cul-de-sac of Douglas from the vaginal side. There was no time to be lost. Something must be done at once. After a hurried consultation the husband agreed that his wife should be immediately moved to the hospital. I offered the use of my cab that was standing at the door. It was decided that the doctor should go to his office and telephone to the hospital authorities that we were bringing the patient up so that time would be saved. He was then to meet us on our way up. A neighbor was roused, the little child was given to her for the night. The patient was carried out by the husband, the cabman and myself and the key turned in the door. I told the husband before leaving that his wife might possibly die on the way ; if this should occur he must not blame me, as this was the only chance to save her life.

In a short time we were at the hospital, patient was carried in and prepared for immediate operation. I telephoned to another member of the staff so that he might be dressing and sent the cab for him. It was not many minutes before he arrived at the hospital. I had everything ready so that not a moment would be lost during operation.

The anæsthetic, ether, was administered with the greatest of care. As the patient was pulseless at the wrist it was no easy matter to give it, and as little was used as possible, scarcely more than enough

to deaden the pain of the incision through the skin and to prevent straining. The patient was so collapsed that she seemed scarcely sensible of pain. With a couple of cuts the peritoneal cavity was entered, blood began to ooze out, fingers were passed down to the left tube where I thought I felt a slight roughness of the surface. They were then passed to the right tube ; nothing could be felt. I was then certain that the rupture was in the left tube. Fingers were passed down to the left tube again and this was drawn to the surface, rapidly ligated and removed, together with the ovary. Right side was not interfered with. The blood was washed out by Dr. Adam Wright, while I placed the sutures. A drainage tube was placed and the wound closed. I never made my fingers fly quicker. Only a few minutes until the operation was completed and the patient was ready for removal from the table.

The ether and the hypodermics that had been previously given seemed to stimulate the pulse. Patient was placed back in the ward and the husband advised to remain all night. Frequent saline injections were given per rectum, hypodermics of digitalis and strychnia and brandy were given every hour. The patient gradually began to mend. Convalescence was somewhat slow but very satisfactory. She left the hospital in four weeks.

The left tube has a small perforation near the uterine end. The ectopic gestation was no larger than an ordinary white bean, so that rupture in this case was very early.

Progress of Medicine.

MEDICINE

IN CHARGE OF

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THE TREATMENT OF URÆMIA BY PHLEBOTOMY FOLLOWED BY LARGE INJECTIONS OF ARTIFICIAL SERUM.

In the *Union Médicale* for December 5 M. H. Richardière says that the good results obtained by the method called lavage of the blood in the treatment of infections have led to the general employment of large injections of saline solutions or of serum, and their application in a rather large number of diseases.

These injections have been employed with success in the treatment of a certain number of toxic diseases. In uræmia, in which they are particularly indicated, it seemed at first that they could not be prescribed, because of the lesions of the kidneys and on account of their impermeability. It has been recognized since then, says the author, that the integrity of the kidneys is not an indispensable condition to the employment of lavage of the blood. Its efficacy in the treatment of uræmia is not, however, admitted by all authors. Lépine, in particular, states that he did not obtain recovery in several cases of uræmia in which large injections were employed.

Other authors, however, have been more successful. Sahli, who was the first to conceive the idea of employing lavage of the blood in uræmia, saved by this treatment a patient who was in imminent danger of death. Bosc also recognized the good effects of subcutaneous injections of artificial serum in a case of uræmia due to parenchymatous nephritis. The patient recovered in four days.

M. Richardière recently employed these injections in two cases of uræmia, one of which was very serious, and the results obtained were sufficiently favorable, he thinks, to justify the employment of this treatment.

A fact to be remembered, he says, in order to appreciate the treatment of uræmia by these injections is their perfect harmlessness. They are, of course, somewhat painful, but if they are administered aseptically they do not cause any local inflammation. The two patients referred to, in whom M. Richardière tried the injections, had anasarca, but, although the injections were thrown into œdematous tissue, they did not cause any local symptoms.

The action of these injections is manifest on the temperature. In Bosc's patient the temperature rose a degree in an hour after the injection. In the first patient treated by the author the temperature also rose a degree during the day after the first injection; after the second injection it rose a little more than two degrees. In the second patient the rise in temperature was even more marked.

The pulse, which had been very rapid, became slower; the respiration, which had been irregular, of the Cheyne-Stokes type, became regular. The quantity of the urine passed during twenty-four hours increased notably.

Diarrhœa, says M. Richardière, should be considered a favorable symptom in uræmia. It favors the elimination of the toxic matters which are the cause of the uræmic symptoms. It then constitutes an important element in the lavage of the blood.

The conclusions are: The elevation of the temperature, the diminution of the number of the pulsations, the regularization of respiration, the increase of diuresis, and diarrhœa are the important symptoms which follow the large injections of artificial serum in uræmia.

These symptoms are all favorable in connection with an intoxication. They fully justify the employment of the method called lavage of the blood, and explain the recoveries sometimes produced in cases which appeared to be hopeless.—*New York Medical Journal*.

LAPAROTOMY FOR SUPPOSED PERFORATION OF TYPHOID ULCER.

Dr. W. P. Herringham and Mr. A. Bowlby.—Though perforation in typhoid fever is assumed to be almost invariably fatal, cases have from time to time been recorded in which symptoms, usually held to indicate such perforation, have been followed by recovery.

Whether in these cases the bowel has actually been perforated must always remain doubtful. It has been pointed out by Fitz that there are no trustworthy signs which are pathognomonic of perforation, and that the occurrence of even a local peritonitis alone would be quite sufficient to explain the condition. That the same symptoms may occur even when there is no peritonitis at all is shown by the following case.

A girl, thirteen years of age, was admitted to the Mary ward in St. Bartholomew's Hospital, under Dr. Hensley, on January 2nd, 1896. She was healthy-looking, but had been feeling tired and had suffered from a cough since December 18th, 1895, having been in bed since the 25th. When admitted, she had some bronchitis, the heart was normal and the pulse fair, the abdomen was rather full, the spleen was not palpable, and there were a good many typhoid spots.

The temperature fell very soon after admission, and was normal on January 9th, which was probably the twenty-second day of illness. The motions were then solid, the tongue clean, and the pulse 80. The abdomen remained a little full.

On January 15th, the patient was very well. Her temperature had been subnormal for seven days ; she had been allowed bread and milk for the last two days, and had been taking food well. At 5 p.m. she suddenly complained of acute abdominal pain, which caused her to cry out constantly. This gradually became worse. She vomited frequently. Her pulse was 140 and small. She was given quarter grain of morphine subcutaneously, which relieved her for rather more than an hour ; but the pain then returned as severe as before. An oil enema was administered, but without effect.

The abdomen was then full and tense ; its walls were rigid, and scarcely moved with respiration ; the liver dullness was normal. There was marked tenderness on palpation, especially near the umbilicus, and it was to this region that the pain was referred. The temperature had remained stationary. There was a general appearance of considerable collapse.

At 8.30 p.m. we saw the case together, one of us being at the time on duty for Dr. Hensley. The symptoms had in no way improved. The child lay with the thighs drawn up, and screamed with pain on the slightest movement. The abdomen was rigid, and so extremely tender that no complete examination could be made. Retching was almost constant, though but little was now actually vomited. The pulse was still rapid, the hands and feet were cold and clammy.

As it was considered that these symptoms indicated perforation, and as the patient had previously been in good condition, it was decided to open the abdomen.

The patient was placed under the influence of chloroform, and the abdomen was opened in the middle line below the umbilicus. There was no gas or fluid in the peritoneal cavity, and an examination of the cæcum and the last two or three feet of the small intestine showed no evidence of inflammation or perforation. The whole of the colon contained scybalous masses. The abdominal wound was sutured, and a soap and water enema was administered before the patient recovered from the anæsthesia. The bowels opened freely at once. When the patient again became conscious, she complained of but little pain, and such as there was quickly yielded to small doses of opium.

We record the case partly as a singular and, as far as we can find, unique instance of simulated perforation; partly to show that a recent attack of typhoid fever need be no bar to opening the abdomen, should circumstances be such as to render operation desirable.

We have recently had under observation a similar case of acute obstipation in which the sudden attack and the symptom of collapse were such as to lead one to conclude that perforation had taken place. Large rectal enemata given by means of a long tube were followed by a gradual subsidence of all the grave symptoms.

J. E. G.

PATHOLOGY AND BACTERIOLOGY

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SYPHILITIC LESIONS OF THE HEART.

H. P. Loomis in *The American Journal of the Medical Sciences*, October, 1895, describes the pathological changes in the heart, which were undoubtedly of syphilitic origin, in cases which he has collected from a large series of autopsies that have come under his personal observation.

The most easily recognized and characteristic action of syphilis upon the heart is the development of gummatous tumour in the cardiac muscle, *almost invariably in the wall of the left ventricle*. In some cases, there is difficulty in diagnosing cardiac gummata from sarcomata, solitary tubercles, or early abscesses. Microscopical examination must be made in such cases, and sections stained for tubercle bacilli. The four cases of syphilitic gumma which have come under the author's observation were not diagnosed during life; three died directly or indirectly from the lesion, and two of them suddenly. Notes of three cases are given.

Besides gummata, syphilis gives rise to an indurated myocarditis, which in its later stages is hardly distinguishable from fibroid disease due to other causes. It is only possible to infer the origin of these new growths by the antecedent history of the individual, by the presence of constitutional syphilis, and especially gummata in other situations.

The author believes that as our knowledge of syphilitic diseases

of the heart becomes more perfect, syphilis will be recognized as an important etiological factor in the production of chronic cardiac disease, and that many patients will recover under anti-syphilitic treatment. Fifteen cases of fibroid myocarditis have come under the author's observation, and of these, three were undoubtedly of syphilitic origin. The history of one case is given. Gummata, fibroid induration, and amyloid infiltration are the only syphilitic changes observed by the author in a large series of autopsies. Endarteritis of the vessels of the myocardium, often inducing infarcts, has been noted by some observers. The following table illustrates the different forms of syphilitic disease of the heart :

SYPHILITIC LESIONS OF THE HEART.

- | | |
|--|--|
| I. Gummata. | 1. Recent : Soft reddish or grey masses. |
| | 2. Old : Dry yellow cheesy nodules. |
| II. Fibroid induration. | Localised : Well-defined masses, large size. |
| | Diffused : Accompanied by inflammation of arteries. |
| | Intermediate form : Outer zone of gumma develops into fibrous tissue, cheesy centre remains as fibroid mass. |
| III. Amyloid degeneration. | |
| IV. Endarteritis obliterans, inducing infarctions. | |

From an analysis of the cases personally observed, and from a study of cases reported by other observers, the author comes to the following conclusions with regard to the symptomatology.

When symptoms of cardiac failure occur during the prime of life, for which no cause can be ascertained, such as rheumatism, valvular disease, arterial changes, or kidney disease, especially in a patient having a syphilitic history, these symptoms should always suggest syphilis as the cause of the condition.

Dyspnœa, distressing palpitation, præcordial uneasiness, syncope attacks, a feeble and rapid pulse, are features observed in most of the cases. The symptoms of the interstitial forms are such as would pertain to any disturbance in the function of the muscular tissue of the heart ; so, when a syphilitic patient has suffered for a long time from irregularity of the heart's action, severe palpitation, and interference with the systemic circulation, the possibility that this condition may be due to syphilis should never be lost sight of. A rapid improvement and the amelioration of the cardiac symptoms quickly following an anti-syphilitic treatment, are important factors in arriving at a positive diagnosis of syphilis of the heart.

Patients suffering from changes in the heart due to syphilis either die suddenly with few, if any, symptoms directly traceable to faulty

heart-action, or succumb apparently from syphilitic marasmus with all the symptoms of a slowly-increasing cardiac failure.

REPLACEMENT OF DESTROYED NERVE CELLS.

Al. N. Vitzov (Bucharest), found in the brain of a monkey a new formation, occupying the back part of the skull, after incision of the occipital lobes two years previously. This mass was proved to contain nerve cells and neuroglia cells, exactly comparable in appearance to those present in normal brain tissue.

EXPERIMENTAL RESEARCHES UPON THE INFLUENCE OF LAPAROTOMY IN TUBERCULOUS PERITONITIS.

Dr. N. Stchégoleff (*Archives de médecine expérimentale et d'anatomie pathologique*, September 1, 1894), from careful experiments performed upon dogs, concludes that tuberculous peritonitis is capable of being cured by laparotomy, provided the operation be made at the beginning of the trouble. If it be made late in the disease, a cure can no longer be secured, though life may often be prolonged. It is thought that the curative action of laparotomy is due to the following combination of physical causes: the traumatism that takes place to the peritoneum during the operation; thermic influence; penetration of air into the abdominal cavity, and perhaps the action of light. A combination of these phenomena causes an irritation of the peritoneum, and this reaction is followed by an inflammatory deposit, more or less intense, which is indispensable for the arrest of the morbid process.

The inflammatory reaction is characterized by an infiltration of embryonic cells, phagocytosis, and an active development of the endothelial cells. This new tissue organizes, and the specific elements of tuberculosis perish or are absorbed. That evacuation of liquid is not necessarily the cause of the cure is shown by those cases which get well after laparotomy in which no liquid was found at time of operation. The author thinks that dogs are more susceptible to tuberculosis than is usually thought.

LARYNGOLOGY AND RHINOLOGY.

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ANTERIOR SOFT HYPERTROPHIES OF NASAL SEPTUM

Edwin Pynchon (*Laryngoscope*) speaks forcibly of a condition not unfrequently met with, and to which he applies the above title. It consists of a compressible epithelial thickening of the septum, occurring frequently on both sides, and situated near the anterior end of the middle turbinated. It is readily diagnosed by probe or spatula pressure. This is aided by cocainisation—the small amount of shrinkage produced by it indicating the presence of the pathological condition. The color denotes slight hyperæmia. The enlargement pressing upon the turbinated often produces nasal stenosis, preventing free circulation of air through the nasal attic, and tending to accumulation of catarrhal secretions.

The treatment recommended is by making two or three galvanocautery, parallel incisions from rear to front, through the enlargement, and at intervals of about an eighth of an inch. Care to avoid burning the turbinateds is required. About the third day the slough separates, and as healing takes place increased freedom of respiration is produced. The after treatment consists of applications of camphor-menthol in lavoline.

EXOPHTHALMIC GOITRE.

Tricomi (*Il Policlinico*) reports three cases of Grave's disease, in which he removed parts of both lobes of the thyroid with good results. These cases were typical. In each the goitre was very prominent—the right lobe being larger than the left; (in one the medium lobe was also developed), Palpitation, exophthalmos, pulse 120 to 130, tremor, etc., were all present. Graefe's symptom was absent. After operation these symptoms disappeared in two cases, and in the third there was noteworthy improvement. In two of the cases the dis-

ease had developed after influenza. The author would have recourse to surgical treatment with confidence, when the usual medical resources failed to produce improvement.

DIFFERENCES OF OPINION AS REGARDS THE RELATIVE VALUE OF
EUCAINE AND COCAINE, IN LARYNGOLOGICAL AND RHINOLO-
GICAL OPERATIONS.

L. S. Somers (*Therapeutic Gazette*) says cocaine produces local anæsthesia in from 3 to 5 minutes, lasting from 20 to 30 minutes. On the other hand, eucaïne produces local anæsthesia in from 8 to 10 minutes lasting only 20 minutes. Cocaine produces anemia of the mucus membrane while eucaïne produces hyperæmia. This action of eucaïne, he says, militates strongly against its use in operations upon hypertrophic tissues. The advantages, however, which it has over cocaine are the following : It produces less pharyngeal disturbance, it is less harmful to the system, it keeps better in solution, and the efficacy of the drug is not injured by boiling.

Pouchet (*Sem. Med.*) reporting to the Société Therapeutic, said that he had investigated the physiological action of eucaïne. He found the toxic equivalent almost equal to that of cocaine. He says eucaïne may produce toxic effects, which may even prove fatal, without any prodromic stage. Its action on the heart is as intense as that of cocaine. Eucaïne must therefore be looked upon as a dangerous drug.

Reclus (*Brit. Med. Jour. Epit.*) who has studied the effects of eucaïne from the clinical standpoint, says that in equal doses its anæsthetic power is less than that of cocaine. He thinks, therefore, that it should not be used in serious operations.

On the other hand, J. S. Gibb (*Philadelphia Polyclinic*) has used eucaïne in diseases of nose and throat, and sums up the results of his experience as follows : (1) Eucaïne is equally efficient with cocaine as an anæsthetic in ordinary examinations. (2) Eucaïne possesses equal anæsthetic power with cocaine, and hence is as useful in operations on nose, pharynx, and larynx. (3) Eucaïne is nearly, if not quite as effective as cocaine in reducing the engorged turbinated bodies. (4) Eucaïne is superior to cocaine, in that it is less likely to produce toxic symptoms, and also unpleasant subjective symptoms, particularly as regards the pharynx.

Lastly—Jobson Horne and MacLeod Yearsley (*Brit. Med. Jour.*), after a long article upon the use of eucaïne as an anæsthetic in surgery of the nose, throat, and ear, close with the following paragraph : "Several points remain for further experience to decide, but we

consider that our results, so far, justify us in continuing the investigation. Eucaïne cannot, however, wholly replace cocaine, since the effect of the latter, in reducing the size of the turbinated bodies, gives it a value as an aid to diagnosis, which eucaïne does not appear to possess."

FOREIGN BODY REMOVED FROM THE LARYNX WITH THE AID OF
AUTOSCOPE.

Max Thorner (*Jour. Lar. Jany.*), after eulogizing Kerstein's autoscope for diagnostic purposes in many cases of laryngeal disease, endorses Kerstein's statement, that it may prove of still greater value for operative procedure within the larynx—the only important change from laryngoscopic operations, being to use straight instruments instead of curved ones. In illustration he details the history of the following case :

"Mr. C. F. B., aged 24 years, consulted me March 28, 1896. While eating stewed chicken, two days before, he suddenly felt something 'go the wrong way.' He had subsequently a violent coughing and choking spell, which, after a while, subsided, to be repeated again at night. A physician, who was called, gave him an emetic, after which the patient became more comfortable. Since that time he had occasional coughing spells, although on the whole he had got on very well. However, he was sure that a foreign body, probably a bone, was somewhere lodged in his throat, although there was no difficulty in swallowing, nor any pain worth mentioning.

"The patient was a very strong young man, of more than average size. No signs of distress were noticeable. There was no dyspnoea, nor any tenderness of the neck on pressure. The voice was slightly husky. Laryngoscopic examination revealed in an extremely large larynx, situated longitudinally, a piece of bone, the broad end of which seemed to be imbedded in the right ventricle, while the other end leaned against the left ary-epiglottic ligament. The upper end seemed not to be impacted. It was evident that the patient's larynx was not very irritable. The autoscope was introduced with the medium-sized hood attached. No cocaine was deemed necessary. It was possible to readily grasp the foreign body with a slender serrated forceps in Krause's straight tube and universal handle, and to lift it out of the larynx and remove it, together with the autoscope. The removed piece of bone was one of the small ribs of a chicken, and was nearly one and a half inches long. The whole operation took but a few seconds."

ETHMOID DISEASE.

J. Noland Mackenzie (Amer. Laryngological Association, 18th Ann. Cong.), in an exhaustive paper upon the pathological anatomy of ethmoid disease, says that :

"The chief lessons to be learned from the foregoing study are :

"(1) That the so-called myxomatous degeneration, described by writers on ethmoid disease, is not due to mucus change at all, but is the result of simple inflammatory action.

"(2) That authors have fallen into this error, because they have approached the subject solely on its clinical side, and without the aid of the microscope.

"(3) That purulent ethmoiditis may in many cases endure for years, without producing any bone lesion whatever ; and that therefore the proposition that all ethmoidites tend toward and usually develop into necrosis has no foundation in actual pathological fact.

"(4) That the changes found represent successive steps of the same affection ; and that, therefore, divisions and subdivisions of ethmoiditis, tend to introduce an element of confusion into our pathological conceptions of the disease.

"(5) That the ethmoid region affords probably the most excellent place for the study of the origin of so-called nasal polypi.

"(6) Finally, of great importance is the striking similarity between the young granulation tissue, found in the ethmoid region, and the structure of round-cell sarcoma, and hence the possibility of error in microscopic diagnosis in early and even in more or less advanced cases."

In a foot-note Mackenzie finds fault with the term rhinitis, as ordinarily used in descriptions of inflammation of the lining membrane of the nose. He styles the term a misnomer and its use illogical ; and the term endorhinitis as more exactly descriptive of existing conditions.

HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

WILLIAM OLDRIGHT, M.A., M.D. Tor.,

Professor of Hygiene in the University of Toronto ; Surgeon to St. Michael's Hospital

ASSISTED BY

J. W. SMUCK, M.D.

PULMONARY TUBERCULOSIS AND THE NEW YORK BOARD OF HEALTH.

Dr. Bauer (*New York Medical Journal*) has this criticism of the recent action of the New York Board of Health in ordering every case of phthisis to be registered.

Under the heading "What good will it do?" he says about the only good will be to place circulars in the hands of the sufferers to enable them to take more care of the excretions. It will probably enable the health authorities to prepare a map of the city showing where the greatest number of cases exist. It might also furnish valuable data as regards trades or callings, relative to the disease.

Then under "What harm will it do?" he says it will cause patients who suspect themselves afflicted to delay seeking advice and the golden opportunity to cure the trouble would be lost. It will brand the patient for life. It will make physicians loath to give a diagnosis of consumption when it should be given early. It would seem that more effective work would be done by the Board if their energies were continued in the direction of educating the public and also impressing upon the members of the medical profession the importance of this question and their duty in regard to it.

In the discussion which followed the reading of the paper Dr. Park of the New York Health department defended the action of the Board on the ground that it would insure greater protection to the public, and if a small hospital were provided where the persistent offender could be taken and treated, he thought it would act as a deterrent. Dr. Delevan said that if the Board of Health were to undertake the study of the disease after the method of collective investigation, so successfully employed by them in other departments, the result would be that they would advance the knowledge of the general physician, to his own advantage and to that of his patients.

COUNTY HEALTH OFFICERS.

The agitation coming from the Provincial Board of Health and association of executive health officers of Ontario, of recent years, for the appointment of county health officers seems to be a step in the right direction. The medical health officers as now appointed cannot give that attention which should be devoted to the duties pertaining to the office. In every city and town of this province, outside of some five or six of the larger cities, the remuneration is so small as to preclude the possibility of managing the office without attending to general practice as well.

In a paper read before the Association of Executive Health Officers of Ontario, at Belleville, Dr. P. H. Bryce, secretary of Provincial Board of Health of Ontario, made a strong plea for such county officers.

Comparison of the health work of our municipalities with that of other branches of municipal work during the last ten years, may be made, and it may fairly be asserted that progress in it is as great as in other directions ; but with the exception of our cities and larger towns little exact health work is done.

BETTER SCHOOL BUILDINGS.

Mr. A. M. Sloan, President of Greensburg Board of Health, in a paper read before the state health authorities, Illinois, on "Hygienic Demands for School Buildings," says that 200,000 persons are annually slaughtered in the United States by preventable disease. The children are compelled to climb stairs unnecessarily. Bad ventilation is found in most rooms. The light is so arranged as to make the schools absolute manufactories of shortsightedness. The boys and girls who are to become our future men and women are forced to sit by the hour in rooms where every particle of air is foul with many breaths, and the result is enervated, undeveloped bodies, in many instances too feeble to be anything save a clog to the spirits which inhabit them, thereby making them fit subjects for the ravages of the deadly germs of tuberculosis.

The writer then goes on to give some general rules for building schools, most of which are incorporated in regulations of the Ontario Department of Education.—*The Sanitarian*.

[No doubt there is a great work still to be done along the line of better school buildings in this province, although much has been done in the past ten or fifteen years.] J.W.S.

THE DUTIES OF THE HEALTH OFFICER IN ENGLAND.

- (1) General inspection, including drainage, etc.
- (2) Suppression of contagious diseases.
- (3) Inspection of foods, noxious trades, etc.
- (4) Inspection of schools and public buildings.
- (5) Regular supervision of the water supply.

The remuneration paid to the medical health officers of Ontario only amounts to something like \$12,000 annually, and the total cost of public health matters to the counties is in the neighborhood of \$50,000 annually.

Our educational system costs the province \$5,233,115, which includes \$89,490 as salaries to county school inspectors. Could we not well afford to pay a little more to guard the health of our children?

The medical health officers have now quite sufficient power, but that power, in many cases, does little or no good, because of professional jealousies, etc., in the rural districts.

The direct benefits to be derived from the system advocated would be :

- (1) The position would be permanent.
- (2) The devotion of the whole time of the officer to the work would relieve professional jealousies.
- (3) He would be brought in contact with all the general practitioners in his district through the laboratory.
- (4) Specimens to be examined could be sent without delay or expense.
- (5) The laboratory would be a local depot for the supply of vaccine, etc.
- (6) He would be convenient where prompt action was demanded.
- (7) He could attend systematically to vaccination in the schools.
- (8) He would gradually accumulate data which would give valuable information from a sanitary standpoint.
- (9) Accurate registration of mortality and morbidity could be obtained.

Editorials.

THE BRITISH MEDICAL ASSOCIATION.

WE publish in this issue the list of the officers appointed for the coming meeting of the British Medical Association to be held in Montreal August 31 to September 3, inclusive. We understand it is a rule in the association that those who have previously been officers shall not be eligible thereafter for such positions of honor. When we consider the list of those who have filled such offices during the last few years we can easily understand why the names of many of the leaders of the profession in the old land cannot appear on the programme for this year. However, those who know well the shining lights amongst British physicians think that the list of officers for 1897 will compare favorably with any of the best in former years.

The appointment of Osler to deliver the address on medicine will give universal satisfaction to us in Canada ; and, probably, the same may be said with regard to Great Britain. Mitchell Banks, who is to deliver the address on surgery, is said to be the most successful surgeon in the north of England, and, at the same time, a fluent and forcible speaker. Of the eleven presidents of sections two are Canadians : E. P. Lachapelle, of Montreal, "Public or State Medicine," and R. M. Bucke, of London, "Psychology." Six presidents are from London, England : Stephen Mackenzie, Christopher Heath, Watson Cheyne, Edward Nettleship, Greville Macdonald, and W. A. Waller, all of whom are fairly well known, by reputation, in Canada. W. J. Sinclair, the president of the section of obstetrics, is Professor of Gynæcology at Owens College, Manchester ; and, although not so well known to Canadians as those whose names have been mentioned, is generally recognized in England as a strong man in his department. D. J. Leech, also an Owens College professor, is well known to be one of the highest authorities upon the subject of pharmacology. Most of the vice-presidents are Canadians, and are worthy representatives of all sections of the Dominion.

THE VICTORIAN ORDER OF NURSES IN CANADA.

IT is thought by some worthy people that Canadians should commemorate Queen Victoria's Diamond Jubilee by establishing a national fund for the purpose of placing the aid of trained nurses within the reach of all classes. At a meeting of the executive committee of the National Council of Women, held under the presidency of Her Excellency, the Countess of Aberdeen, the subject was discussed. Since that meeting a scheme has been adopted and presented for the consideration of the public. The committee in charge have asked for the small sum of one million dollars for the purpose of educating, or more probably half educating, a new band of nurses who are to supplement the work of our trained nurses by nursing at half rates, quarter rates, or at no rates at all.

The new cheap nurses are not to interfere with the trained nurses, and yet they are to be paid a "modest, moderate salary," which will lift them out of the precarious state of "waiting for a case." They are to be gentle and strong, endowed with sympathy, a delicate touch, and a charm possessing a virtue beyond that of any drug. Their qualifications are to be of the highest class. They are to work in sparsely settled and outlying country districts, villages, towns, and cities, any and everywhere, from Labrador to British Columbia. All this and many other things about these sweet creatures of the near future we learn from a little pamphlet published by the committee. The work of the committee is thus mapped out. It is to (1) draft a constitution, (2) decide how the governing body of the new order is to be chosen, (3) determine how the work to be undertaken shall be carried on.

Some there are who have doubts as to the practicability of this lofty scheme. As our hospitals are now manufacturing nurses at such a rate that the supply is more than enough to meet all demands, it is wondered when and how the new order is to be manufactured. We understand from the pamphlet that such trifling details are to be settled by a committee chosen by vice-patrons, vice-presidents and representatives of the subscribers. Certain parties who have had considerable experience think that it is not a very simple matter to train nurses in well ordered hospitals, where the candidates are required not only to receive instruction from their teachers but also to spend two or three years in laborious practical work under rigid discipline. Such people also think that the new order of nurses cannot be properly educated; and, at the same time, they believe that competent professional nurses should be encouraged and protected from

the warfare of unqualified nurses just as regular physicians and lawyers are protected from the rivalry of the irregular in both professions.

It must be understood that many of those who have their doubts about this new order have the greatest possible respect for the many noble women, whether belonging to sisterhoods or not, who are in a quiet way doing much to relieve human suffering. They also sympathize with professional nurses in the good work they are doing, and wish them the highest success. But, at the same time, they have no desire to see an influx of half educated go betweens—neither amateurs nor professionals as we understand the words—who are likely to injure nursing as a profession without accomplishing any great amount of good. If the good people who favor the new scheme could present something practical and tangible it might be more easy to form an intelligent opinion about the matter.

POISONING BY ILLUMINATING GAS.

LAST month we referred editorially to the necessity for some preventive measure to lessen the number of cases of sickness and death from the inhalation of illuminating gas. We postponed reference to some points of clinical and therapeutic interest.

The observations of practitioners in this country agree with those of certain British and American cities in connecting the increased fatality with an introduction of what is called *water-gas*. Our clinical experience with these cases of poisoning from water-gas differed from that which occurred to us with other cases in which asphyxiation had been present.

When they first began to present themselves we were often disappointed by unexpected results: patients would begin to breathe automatically, and could be partially aroused, and yet would succumb, and this sometimes after the lapse of several days. In the discussion at last year's meeting of the British Medical Association to which we referred in our previous editorial, we find the same experiences recorded. In the case reported by Dr. G. R. Davidson, of Belfast, in which death, with symptoms of pneumonia, occurred in five days, he advanced the suggestion that the cells of the respiratory tract were too much enfeebled to resist the action of the pneumococcus. Dr. Alexander Scott, of Glasgow, stated that the combination of carbon monoxide and carbon dioxide was especially deadly.

Another curious point in connection with prognosis is that the final result cannot always be measured by the profoundness of the coma when the patient is first seen. At one time a case may be met with in which there is deep coma followed by rapid recovery. At another time a case in which coma is not so profound at first, may go on to a fatal termination. The observations of the present writer had led him to the conclusion that when the term of exposure was shorter the outcome was more hopeful, even if the dose had been somewhat heavier, the longer period of exposure allowing of more permanent change in the blood. The same conclusion has been expressed by others. Difference in nervous organizations may also have a modifying influence.

In the discussion above alluded to, Dr. Haldane, of the University of Oxford, showed by experiment that a mouse could live in a jar "exposed to a mixture containing carbonic oxide exercising one atmosphere's pressure, besides oxygen exercising two atmospheres' pressure. Although it becomes somewhat short of breath, the mouse continues to live and walk about in the jar. As soon, however, as the pressure is lowered death ensues, as the amount of dissolved oxygen then becomes insufficient to support life. The venous blood (assuming that it already contains 12 volumes per cent. of oxygen) probably takes up normally about 8 volumes per cent. of oxygen in chemical combination (with hæmoglobin) and $\frac{1}{2}$ per cent. in simple solution." . . . "We can, by increasing the pressure, so increase the amount of the oxygen taken up by the blood in simple solution as to make the animal independent altogether of its red blood corpuscles as oxygen carriers."

We have referred to these etiological details of the discussion on account of the important bearing they may have on prognosis and treatment. The fact that if the blood contain a large amount of oxygen in solution it will support the vital functions, even if the oxygen-carrying office of the corpuscles be in abeyance, and that a critical period may thus be tided over, and the further fact that a certain amount of carbon monoxide may be gradually detached from the hæmoglobin by the presence of oxygen, should lead us to give oxygen freely in these cases. Again, whilst we must recognize that there is a difference between surrounding an animal with increased atmospheric pressure and forcing air by pressure into its lungs, still we think that the observations and experiments of Haldane have some bearing upon the new or revived method of treatment of asphyxia by forced respiration, of which Dr. Fell, of Buffalo, is such an ardent advocate.

It is not our intention, in this article, to discuss other details of treatment, such as administration of strychnine, nitro-glycerine, transfusion of blood and saline solutions, application of warmth, etc. ; but we would notice, in passing, Dr. Dawson's remark that "caffeine is the (stimulating) drug *par excellence*." "Alcohol and ether are contra-indicated, as they lessen the oxidizing power of the blood."

W. O.

THE SUPPRESSION OF TUBERCULOUS FOOD.

MANY of our readers have watched with great interest and satisfaction the efforts that have been made during the past few years by the Provincial Board of Health to limit the spread of tuberculosis.

Closely following the conclusive proofs of the dissemination of tuberculosis by the feeding of the flesh and milk of tuberculous animals, in the experiments conducted in various parts of the world, amongst which we may mention those of the Local Government Board of Great Britain—closely following these, there came the revelations of the diagnostic value of tuberculin. These were speedily verified in a somewhat startling manner by the observations of Mr. J. J. Mackenzie at the Agricultural College at Guelph. Here the injection of tuberculin indicated by a rise of temperature the existence of tubercular disease ; some of the animals giving this reaction were supplying milk, and tubercle bacilli were detected in it by microscopic examination, although there was no disease of the udder ; in all cases of tuberculin reaction when the animals were slaughtered *post mortem* examination gave ample verification of the existence of tubercular disease. Similar results were obtained at the Experimental Farm at Ottawa.

We were now filled with anxiety by the serious problem confronting us. If we had such unexpected and unpleasant results in the milk of animals amid good surroundings, what about our indiscriminate milk supply ? What a constant menace to the health of our children, who are so dependent upon milk as an article of food !

But the indefatigable secretary, Dr. Bryce, supported by the other members of the Provincial Board, has been wrestling with the subject, and last year the Legislature passed an act giving municipalities power to deal effectively with this problem. The Local Board of Health of Toronto has now determined to protect the children and other consumers of Toronto under this Act. In another part of this

issue we publish the new regulations, of which the main feature is that every milk producer providing milk for use in Toronto must have every cow on his premises tested by tuberculin.

And now has come the opposition of self interest and selfish interest. The milk producers have organized, and object to the expense and worry and bother of having their cows examined; and they have found out that this is a conspiracy of veterinary surgeons; and along with them have come certain other characters—the man who has been drinking milk (*et alia*) all his life and has never seen a microbe, and is not dead yet; and the politician who needs the farmers' votes, etc. But in the contest of last Saturday afternoon at the City Hall, after some solid facts ably and vigorously put by Dr. Sheard, Dr. Sisley, Mr. Preston, and others, fact and science got the best of it, and the point left to be decided appeared to be, who shall pay the piper: the Provincial Government, the city through the Local Board of Health, or the milk producers? It was pointed out that the latter had the matter in their own hands, and if at present prices they cannot afford the test, they have simply to add a fraction of a cent to the price per gallon to recoup themselves.

We hope that those who are fighting the battle for us and our children against the ravages of tuberculosis will have the warm individual as well as collective interest and support of our profession.

Between the time of writing the above and going to press we have been informed that the Legislature has suspended the action of the clause enforcing the tuberculin test for one year. We regret that even a year will elapse before this desirable measure is enforced, but we trust that at the end of that time all parties will be fully prepared to take action.

W. O.

Correspondence.

DOCTOR OF REFRACTION.

To the Editor of THE CANADIAN PRACTITIONER.

SIR,—The public thinks that by going to a “doctor of refraction” it is thus employing a regularly authorized and well educated man, who is, what he says he is, skilled and well versed in the giving of glasses. Also as an additional incentive is the phrase “examination free of charge.”

The “doctor of refraction” takes good care fully to recompense himself for his time and the value of the glasses given by the price that is charged. This “bargain” idea which influences the public, is misplaced confidence. As to the professional standing of the “doctor of refraction,” it has a wrong idea. At this I am not so much astonished. The “doctor of refraction” is allowed to assert himself as everything he claims to be without the medical council taking any steps to show the public that he has a worthless degree. Again, it is still less to be blamed, when it will, in support of the “doctor of refraction” say, but Dr. So and So, my family physician, said to go to such and such a jeweller and get the “doctor of refraction” or equally misapplied name, “optician,” to test your eyes for glasses. Here the family physician is assuming a grave responsibility, and grievously injuring the medical profession; for he is deliberately recommending a patient to consult an unqualified man. He may say, as some do, it is only for glasses. He ought to know that correctly to prescribe glasses requires all the skill and care of an oculist, and that the symptoms of the necessity of glasses may be due to another condition of the eyes altogether, that is disease of them. This I have had personal knowledge of on a good many occasions. I hold that the physician who so acts is betraying his trust both in relation to the public and his brother physicians. Moreover, when the public sees this tolerance and support of quacks by the profession, it is apt to say, those quacks must be pretty skilful

after all as the regular physician recognizes them by sending patients.

I have another query to put to the medical council. Why does it allow to remain unwarned and unprosecuted the regular physician or physicians, who act irregularly in a most open way? The mind of the whole profession is ethically so poorly educated that even it, I may say, very often seems to be actuated in its procedures regarding non-ethical conduct more by prejudice than, as it ought to be, by principle.

I think it is time that the medical profession took thought of the complaint herein made and by the non-support in every way of the "doctor of refraction," make evident to the public their opinion of him, and thus at the same time remain true to the trust reposed in them by the public, and that demanded by and promised to the medical profession at large.

Truly yours,

G. H. B.

Meetings of Medical Societies.

TORONTO MEDICAL SOCIETY.

THE regular meeting was held on the 1st of April, Dr. W. J. Wilson presiding.

The secretary read the minutes of the second last meeting, which were adopted. The minutes of the last meeting were taken as read.

Dr. Chambers presented a young man with acute glossitis. The patient had an affection of the tongue twelve years ago, which started in the papillæ. The tongue became black on the surface, as it is now in two or three places, probably due to ecchymoses. The hypertrophied papillæ extend to the base of the tongue on one side, and only half way on the other.

Dr. Wilson asked if the patient had ever had typhoid. He had seen typhoid produce a bad tongue. Dr. Chambers said that there was no history of typhoid.

Dr. Starr presented a boy aged ten, with a non-developed arm. At the age of five months it was noticed that he did not use the right hand. There was no history of difficult labor, nor of an acute illness. The arm is about the same length as the other, but the most of the muscles, especially those about the shoulder, are affected, being markedly atrophied. The latissimus dorsi, both pectorals, and the supinators, are markedly affected. The clavicle and the scapula are very small. The humerus is very fragile, and has been broken several times.

Dr. Hunter said that he had had a somewhat similar case. All the limbs were affected. They were all paralyzed at birth; the lower ones worse than the upper ones. At four the child had diphtheria. Since then there had been a steady improvement.

Dr. McPhedran, referring to the case of glossitis, said the bacteriology of the case should be gone into. He thought there was a constitutional as well as a local cause to account for the trouble.

Dr. Chambers said he thought it was a case of ichthyosis.

Dr. Graham said he was not prepared to say what Dr. Starr's case was. The attack coming on in July was suggestive.

Dr. B. E. MacKenzie said he had a patient whose leg presented a similar condition to the arm of the boy presented. He had applied an orthopædic apparatus, which served as an artificial limb. He was in doubt as to whether it was caused primarily by infantile paralysis or not.

Dr. Peters said it seemed to him that the lesion showed an affection of the anterior roots of the spine. The intrinsic muscles of the hand, which were supplied by the ulnar nerve which came from the first dorsal, were fairly well developed. The extensors and flexors of the wrist were developed, and also the extensors and flexors of the fingers. But the muscles supplied by the fifth, sixth, and seventh were atrophied. Then there was no sensory disturbance. So that the lesion corresponded to a segment of the spine, rather than to certain nerves.

Dr. McPhedran pointed out that the neck on one side was more developed than on the other. The sterno mastoid on the affected side was well developed, while the trapezius was not. The latissimus dorsi was practically absent. So that the lesion was wider than Dr. Peters thought.

Dr. Hunter presented a boy who had been operated on for contracted foot by Dr. MacKenzie. Dr. MacKenzie discussed the pathology of the case, and described the operation. The result was a good one.

Dr. Hunter presented a man with Dupuytren's contraction of the hands, and a similar condition in one of the feet. He had cut the fascia on one of the hands about a week since, and straightened the fingers. The case was progressing favorably. He related the history of two other cases he had treated.

Dr. Carveth said Dupuytren had made a study of this condition, which had taken his name about seventy years ago. He attributed as causes of the condition gout, and injury to the nerve endings. His treatment consisted in restoring the fingers to the correct position, dividing across the contracted fascia, and applying splints for a number of weeks. He advised amputation when the disease had run a long time. In the later stages of the disease the muscles and tendons become contracted. The treatment recommended now-a-days was to make an incision over the contracted part, and dissect out the fascia, and treat the wound in the ordinary way.

In reply to a question, Dr. Carveth said that the condition was brought about by a slow form of inflammation due to irritation of

the nerve endings. In most cases there was a history of injury. In answer to a question as to how the condition was accounted for when it occurred in the new born, he said that Abbe held that such were not true cases of Dupuytren's contraction.

Dr. J. E. Forfar read a paper on

HYSTERO-EPILEPSY.

The diagnosis and treatment of this disease were difficult. It might appear in the guise of many other ailments of spine, heart, lungs, or uterus. Such cases should receive the most careful attention. In this disease ideas control the body and produce morbid changes attended with epileptiform seizures. The patient shows mental irritability, altered moral disposition, lessened inhibitory force, impairment of volition, illusions, etc. Charcot claimed that scleroses of the lateral columns of the cord were found in post-mortem examination of long standing cases. The disease was most common in females between the ages of fifteen and thirty-five. Mal-digestion, worry, anxiety, grief, bad hygienic surroundings, fright were reckoned among some of the causes. Heredity was an important predisposing cause. Anæsthesias, parasthesias, paralyses, contractions, hallucinations, headache, the globus hystericus, cardialgia, singultus, etc., were some of the symptoms complained of. The essayist pointed out the difference between this condition and epilepsy proper, giving a tabulated list of the symptoms of each. A complete description of the various phases of the convulsion was then given. Treatment should be directed toward removing the causes. During the attack assafoetida and yolk of egg may be administered per rectum if the mouth cannot be opened. The mouth may be filled with salt; the head drenched with cold water. Electricity may be used for the paralysis. The patient should not be treated as a malingerer. Friends should be kept away. Any uterine derangement should be treated. Patient may be kept on milk. Hypnotism might be employed. Change of scene was to be recommended. No alcohol should be allowed.

Drs. Graham and Cameron discussed the paper.

Dr. Hunter reported a case occurring in a man, which dated from an injury.

Dr. McPhedran presented a cylindrical epithelioma of the stomach. The patient gave a history of debility and anæmia, loss of appetite, pain and distress in the stomach for the past fifteen months. The patient was not greatly emaciated. There was distention of the stomach. The contents showed the presence of

hydrochloric acid. A few days before death the temperature ran up moderately high. Post-mortem showed the mass to be situated in the greater curvature. There were several smaller masses. The doctor reported a second case in which the carcinoma was situated in the pyloric end of the stomach. A gastroenterostomy was done, and the patient was improving.

Dr. H. H. Oldright showed a dermoid cyst, which, with the assistance of Dr. Wm. Oldright, had been removed the day before from a woman. The patient gave a history of miscarriage followed by frequent and painful micturition. Examination showed the mass to be in the pelvis behind the uterus. The cyst was opened before the society, and was found to contain fat, hair, and teeth.

The society then adjourned.

THE TORONTO CLINICAL SOCIETY.

The regular meeting of the society was held in St. George's Hall, on the tenth of March.

President Dr. Allen Baines occupied the chair.

Fellows present : Doctors Strange, W. H. B. Aikins, W. Britton, J. A. Temple, J. E. Graham, B. Spencer, Trow, A. A. MacDonald, A. H. Wright, Fenton, Anderson, Johnson, Primrose, Peters, Oldright, J. O. Orr, Cameron, Davison, O'Reilly, Bingham, Boyd, Fotheringham, McDonagh, Baines, and Brown.

The minutes of the last meeting were read and adopted.

Dr. H. J. Hamilton was nominated as a Fellow, moved by Dr. Trow, seconded by Dr. Brown.

Dr. A. Primrose presented a patient who had accidentally shot himself eight weeks ago with a revolver of thirty-two calibre, the bullet entering the chest one inch from the middle line over the sixth cartilage. His physician put him under chloroform and probed for the bullet, but was unable to find it. He thought it was lodged in the liver. With the "X" rays the bullet could be seen between the shadow of the heart and that of the liver when the patient took a deep inspiration. By getting the tip of the finger, the bullet, and the sharp end of a pair of shears in a line while the shadow-graph was taken from the antero-posterior direction, and resorting to the same device while the shadow was taken from side to side, it was discovered that the bullet was about three-quarters of an inch to the right of the point of entrance, and about five-eighths of an inch from the surface. The shadow of the liver, and also of the heart with its pulsations, could be distinctly seen.

Dr. J. E. Graham said that he had seen it reported that in a similar examination with the rays it had been noted that the heart moved up and down with the respiratory movement. It had also been stated that if the patient were exposed too long to the rays the circulation would be affected.

Dr. Primrose said that with the liver moving up and down during respiration the heart must surely do so too.

Dr. Grasset said that he had seen a similar case to the one reported and had referred the patient to Dr. Walker, who took a skiagraph, but no bullet was made out. The patient suffered from no symptoms.

Dr. Primrose suggested that the bullet might have been in the shadow of the liver.

Dr. Oldright asked if the lungs made a shadow.

Dr. Primrose replied that one could see through the lungs perfectly. He thought it would be difficult to get a shadowgraph in the case presented, because the bullet could not be made out during expiration.

Dr. J. E. Graham read a paper on

POISONING BY ILLUMINATING GAS.

He gave the history of two cases. They were of two sisters who had retired at 11 p.m., and were found the next morning at 8.30 in an unconscious condition.

The patients were removed to a pure atmosphere and artificial respiration commenced, strychnia given hypodermically, and brandy per rectum.

The pulse of the elder was weak, a strong odor of gas came from the lungs, and the breathing was stertorous at times. There were erythematous patches on the face. The urine and the faeces were discharged involuntarily. A severe pain would cause the limbs to move. The temperature before death rose to 105, the respiration to 80, the pulse to 150. The disintegration of the corpuscles may have accounted for the high temperature.

In the second patient the condition appeared to be much the same, but she suffered from nausea and vomited freely. A pinch would produce tonic spasms of the arms. The pupils were contracted. The patient lay unconscious for seventy-nine hours. The urine was drawn off by catheter for four days, then micturition, as well as defecation, was involuntary, but afterward, both were normally performed. The highest temperature was 103. As the patient grew stronger she became irritable and nervous, and asked foolish ques-

tions. There was a certain amount of aphasia. A saline solution was given per rectum, which increased the elimination from the kidneys. Patient grew worse if this part of the treatment were omitted. Nitro-glycerine was administered the first week. The brandy which was also given caused stertor. The skin was sponged with salt water.

The doctor said that illuminating gas was much more poisonous than formerly. The proportion of carbon monoxide formerly was five to ten per cent., now it formed about from twenty to thirty per cent., according to analysis made in Boston recently.

The effects of carbon monoxide on the blood were still under discussion. It formed a compound with the hæmoglobin in the blood corpuscles displacing the oxygen, so that the corpuscles could no longer perform their functions as oxygen carriers.

If a patient were exposed for a long time to a small amount of gas the symptoms were worse than in those cases where the exposure had been shorter to a large amount. The symptoms in cases of slow poisoning were then described.

Secondary conditions produced were bronchitis, hæmoptysis, headache, paralyses, hyperesthesia, anæsthesia, herpes, pemphigus, gangrene, etc.

One authority had pointed out that there was increased permeability of the capillaries; this might explain the occurrence of some of the nervous phenomena.

Dr. Graham said that reports of post mortems are not as exhaustive as one might wish. He detailed those signs usually found.

After discussing the prognosis the doctor described the management of such cases fully.

A review of such cases brought up an important question in medical jurisprudence. It was doubtful if corporations had a right, for purposes of economy, to supply to dwellings such a poisonous gas as water gas is known to be.

Statistics had shown that the number of deaths by suicide and accident had increased three or four fold since the introduction of water gas as an illuminant.

Dr. Oldright said that this was a question in which the Fellows were each personally interested. He called attention to the large number of cases of death from gas poisoning. The less virulent character of coal gas than water gas had been shown by experiment with animals. He suggested that the inspectors of gas-meters might inspect gas fixtures as well. This would save many accidents. The

habit of shutting the gas off at the main for purposes of economy or safety was fraught with danger, because next morning when turned on again it might escape from a tap which had been left open the night before. Certain preventive measures were referred to by the speaker, such as, the use of automatic burners, the opening of the fan-light, etc. After referring to the pathological condition of the blood, the speaker said that the most fatal form of gas poisoning arose from a combination of carbon monoxide and carbon dioxide according to Scott of Glasgow. The same authority reported cases of insanity and imbecility as sequelæ to gas poisoning. The speaker described an experiment for ascertaining the percentage of carbon monoxide in the blood. It was held by some that the administration of oxygen under pressure tended to the separation of the hæmoglobin and the monoxide. Alcohol was not beneficial in these cases according to some authorities; but was positively injurious. Transfusion of blood was said to be of more service than saline solutions; the latter did not improve the quality of the corpuscles. He had noted in cases that recovery followed in cases where patients were exposed to a large amount of gas for a short time more readily than where they had been exposed to a small amount for a long time.

Dr. Cassidy said that he had found upon inquiry that the gas used in the city of Toronto contained only about 12 per cent. of carbon monoxide.

Dr. J. L. Davison asked if it was not better to use defibrinated blood than the salt solution with the hope of replacing the disintegrated corpuscles, to lead to the carrying on of normal oxidation in a more normal manner.

Dr. A. J. Johnson described the post mortem changes found in these cases. The main features were the same as those in other cases of asphyxia. The color of the ecchymotic patches in these cases was somewhat distinctive. A patient might be poisoned in a room while the gas was still burning in one jet, though escaping from another, showing that it would kill although not large enough in amount to be inflammable. Dr. Johnson gave the history of some cases.

Dr. Cassidy stated that air charged with from $\frac{1}{2}$ to 1 per cent. of the monoxide was fatal. In one case recorded it was estimated that the percentage was only .44.

Dr. Primrose said he thought that the saline injections were more efficacious than the blood, because the disorganized corpuscles would not be able to utilize the blood injected.

Dr. Cameron pointed out that the normal salt solution had no power of carrying oxygen, although it might maintain the tension of the circulation until the nutritive processes came into action so that sufficient pabulum was formed in the system from which the hæmoglobin could be obtained. To carry oxygen hæmoglobin was necessary, and he was of the opinion that the injected blood would supply the hæmoglobin to take up the oxygen given. A rational procedure would be, inasmuch as the monoxide formed such a stable compound with the hæmoglobin, to deplete the venous system and introduce new blood from without. He, however, had never seen any such experiment in the human animal.

Dr. Peters said it seemed to him desirable in such cases to get the oxygen into the blood in some way, either by forcing in air or oxygen. In order that the patient be alive it was necessary that there be some hæmoglobin in the system. There was no doubt that if the patient recover the carbon monoxide must disappear. It was not definitely known how the hæmoglobin formed in the system. It was probable that the injections of salines by washing out the tissues induced protoplasmic changes which were followed by the formation of corpuscles containing hæmoglobin. Oxygen forced into the system was a most important procedure.

Dr. Spencer asked if the effects of the carbon monoxide were less injurious to younger than to older persons. It seemed to be so in the cases reported. He had been called in attendance on a man, wife and baby who had been poisoned. The father and mother were both insensible, but by hard work were saved. The child was little effected and was playing about in the morning. His conclusion was that the metabolism was much more rapid in the child and the hæmoglobin formed more quickly, and so the child was more able to withstand the action of the gas.

Dr. Anderson said that the younger woman of the two cases reported was the weaker, according to the history. Probably she suffered less because she respired less deeply.

Dr. Graham said that he preferred oxygen to ordinary air in the treatment by forced inspiration. It had proved immediately beneficial in the two cases. Improvement was immediately noted on the pulse. In this way the hemoglobin which has been injured by the carbon monoxide is more thoroughly oxygenated, the nerve centres are better nourished and secretion and elimination take place in a more direct manner. By bleeding the patient much more poison is gotten rid of than in my other way. He did not think that the transfusion of blood was of any special advantage, because in ordin-

any conditions the blood corpuscles of the transfused blood became disintegrated.

Dr. Charles O'Reilly read a paper on

ARTIFICIAL RESPIRATION.

He also presented the Fell apparatus for doing forced respiration, and also one of his own devising. He said failure of breathing of a non-obstructive character arose from various causes, such as an over-dose of anesthetic, affections of the lungs, and bronchial tubes, syncope from anæmia or heart failure, an over dose of morphine, chloral, gas, and suffocation from drowning. Dr. O'Reilly reviewed the methods proposed by Sylvester, Howard, Hall and others. In certain cases where there was rigidity of the muscles of the chest or of its walls forced respiration was probably the best procedure to adopt. This procedure had been recommended at various times by such men as John Hunter, Simpson, Richardson and others, but of late, Fell, of Buffalo, had been its chief exponent. His apparatus as offered to the profession was too expensive. It, however, could be readily improvised by the physician. The doctor then showed one he had made. He said he had not yet had the opportunity of using it. The apparatus consists of a pair of hand-bellows, a long rubber tube in which a valve is placed which is opened when expiration takes place. To the oral end of the tube is attached a mouth-piece, which fits tightly over the face. In cases where it was necessary to do tracheotomy a special tube was used for insertion into the trachea.

Dr. O'Reilly's own device was a most ingenious one. It consisted of a garden hose tube. One end was attached to the perforated top of a tin pail which contained lime water through which the inspired air was drawn. One coil was then made in a pail of warm water to warm the air as it passed through the tube, then proceeded to the bellows and from the bellows a tube led to the mouth-piece.

Dr. Oldright presented a jar he used for the administration of oxygen ; which was of use when a bag was not available.

On motion of Dr. Primrose, seconded by Dr. Wright the nomination of officers was deferred until the "next meeting.

A paper to be presented by Drs. J. A. Temple and F. Fenton was laid over until the next meeting.

The society then adjourned.

TORONTO PATHOLOGICAL SOCIETY.

REGULAR meeting held in the Biological Building February 27, at 8.30 p.m., the vice-president, H. B. Anderson, in the chair. Members present, Anderson, Greig, Carveth, Graham, McPhedran, W. Oldright, Fotheringham, Primrose, Starr, Cameron, Reeve, J. J. McKenzie. Visitor, Dr. Goldie.

Dr. J. E. Graham presented,

(A) CARCINOMA OF THE STOMACH.

Discussed by Dr. McPhedran.

(B) MITRAL STENOSIS.

CASE. Young man, æt. 23. History of gonorrhœa in October last, and history of heart trouble caused by running a mile race about a year ago without previous training.

History of paralysis (right hemiplegia) fair recovery.

Heart became very irregular during an attack of tonsilitis in January, during his stay in the hospital, but he recovered. He died from a similar attack February 18.

Dr. Graham also showed a sphygmographic tracing of a heart with a double aortic lesion, showing marked anacrotism which had been pronounced by the finger a dicrotic pulse. The explanation given was that the aortic orifice being always open, at the beginning of the systole a contraction of the aorta causes the first rise and the large ventricle, with its heavy blow to the blood column, causes the second wave in the tracing.

Discussed by Drs. McPhedran and Primrose. Diffuse cancer of the liver (slides) resembling closely hypertrophic cirrhosis of the liver in gross characters.

Dr. J. T. Fotheringham presented lung from a case of fibroid phthisis. Discussed by J. E. Graham, I. H. Cameron, and A. McPhedran.

LUNG FROM CASE OF FIBROID PHTHISIS.

CASE. Patient C., æt. about 40, had suffered from tubercular glandular abscess of left axilla some twelve years before, cure of which was apparently complete. Four years ago he began to cough, and had on admission all the signs of chronic pulmonary tuberculosis. The left lung was evidently the later affected, and the process in it was one of tuberculous broncho-pneumonia. The base of the right lung was retracted so that the liver was bare to the fourth interspace in front, and the pulsations of the heart plainly seen in three

interspaces to the right of the sternum. The base behind was about three inches higher than that of the left lung. Attention of members is drawn (1) to the great size of the two communicating cavities of the apex.

(2) To the very marked local thickening of the pleura at the apex.

(3) To the localized fibrosis about the cavities, just such as is seen about all such cavities, though here rather more than usually extensive, so that between fibrosis and cavity formation the entire upper half of the lung is quite without any value in respiration.

(4) To the combination of fibrosis and broncho pneumonia seen in the lower half of the lung, and the remarkable difference in gross appearance between the upper and lower halves.

(5) To the perforation of the large branch of the pulmonary artery in one of the cavities, well found at time of post-mortem examination by inflating air at the cut end of the artery in the root.

(6) To the absence of bronchiectasis death was due to a sudden and very severe hæmorrhage, about 5 a.m., while lying quietly in bed, a mode of death which Jurgensen says is rather rare. He had had some small hæmorrhages before, at long intervals, which again Jurgensen says is commoner in cirrhosis than in ordinary tuberculosis of the lung. A distinction not of much value in our present knowledge of the disease.

The examination of the lung satisfies me I think that I had overestimated in my clinical examination the amount of disseminated fibrosis as shown by the baring and displacement of other viscera, and that I had underestimated the amount of mere mechanical uplifting of the lung from the dome of the diaphragm by the steadily contracting adhesions and cavities at the apex.

In Ziemsen's *Cyclopædia of Medicine* Jurgensen gives modes of death, as follows, in order of frequency :

(1) Cardiac—with dropsy and dyspnœa.

(2) Septic absorption from putrid secretions in large bronchiectatic or phthisical cavities.

(3) Exhaustion, as in ordinary pulmonary tuberculosis.

(4) Hæmorrhage.

(5) Pnuemo-thorax.

(6) Metastatic brain abscess. } rare.

Present view as to pathology and etiology of this disease is, broadly :

I. That some cases may begin as a tuberculous process ; slow,

fibroid, well resisted, especially a pleuritic deposit first, invading lung from outside.

II. That others are secondarily tubercular but primarily simple—(whatever that may mean)—following on

(a) Chronic bronchitis.

(b) Broncho pneumonia, as seen especially in whooping cough, measles, typhoid. Jurgensen, in Ziemsen's *Cyclopædia*, gives these diseases as causes.

(c) Pleurisy, especially with effusion and long compression more certain to produce cirrhosis if purulent, providing patient lives.

(d) "Dust lungs."

(e) Syphilis—Virchow says usually a broncho-pneumonia or a chronic multiple pleuro-pneumonia. (Jurgensen *loc. cit.*) Some of these may at least conceivably remain uninfected with tubercle to end.

Delafield and Budden make the rather sweeping statement that "only one lung is small and the other lung is large and emphysematous." German authorities show that bronchiectasis occurs rather more frequently in one lung than in both, and that if in both one is more seriously affected than the other.

Jurgensen (*loc. cit.*) gives a very interesting historical sketch of the study of the disease, and his own views are now interesting mainly from a historical point of view, as the real nature of tuberculosis was then unknown to him.

He indicates that for long enough the fight raged round the question of whether this disease began in the tubes and after bronchiectases had formed, proceeded to invade the tissues, or *vice versa*. The necessity of bronchiectases as part of the disease was then conceded apparently by all.

In 1808 Lænnec described bronchiectasis fully, and for the first time, and thought it purely mechanical from pressure of retained secretion.

Andral followed his countryman Lænnec, and added the idea that disturbed nutrition in bronchial wall was an important element in the case.

Raynaud, 1835, added the idea that respiration had to do with the formation of the sacculations, giving inspiratory effect the chief credit or blame.

Then the English physicians began investigations, and to them Jurgensen gives generous credit—Stokes, Williams, and Corrigan.

Stokes "first advanced the idea, so fertile of suggestions, that under certain circumstances bronchi and arteries are legitimately comparable."

Then Williams clearly insisted on the impairment of the quality, mainly of elastic elements in bronchi, due to chronic inflammation, which allowed respiratory effort, especially that due to cough, to act in producing dilatation. Williams thus opposed Raynaud's inspiratory theory directly.

Corrigan then came, marking the division between the ancient and modern in the nosology of this disease, for he drew a parallel between cirrhosis of the liver and this disease, and thought that the process began in what he called the "fibro-cellular" tissue lying between the bronchi. He seems to have expressly stated that the bronchiectasis was not due to a bulging force from within the tube alone, but to a dilating force from within, due to the pull of the contracting pulmonary tissue. The idea that bronchiectasis is an essential part of the disease died out only when the distinction was clearly drawn between tubercular vomicae and dilated bronchi, since 1860.

In this particular lung, bronchiectasis is not a marked feature, so that these old observers would probably have called this an instance not of chronic interstitial pneumonia, but of fibroid phthisis, a distinction which I think we would do well to draw, though the terms are now convertible. In other words, we should, I think, look on this as a primary tubercular cirrhosis, not as an interstitial pneumonia with secondary tubercular infection.

After Corrigan's work, the Germans had their innings, Hasse and Rokitansky being prominent in the investigation, not so much of the lung condition as of the sequelæ or complications, such as heart-changes, dropsy, hæmorrhages, etc. Jurgensen credits the term "interstitial pneumonia" to Rokitansky.

About 1860-4 Biermer, in Virchow's collected works treated of the whole subject very extensively and thoroughly, and in 1862 Traube and Zenker did much to clear up the question of "dust lungs" and the changes consequent on the introduction of such foreign matter to the lungs.

My apology for dipping into history thus is that it is desirable that we should occasionally "take stock," as it were, to see how very recent, in the case of almost all diseases, is the more correct view which we are taught and which we are apt to take for granted to have been the view of an indefinite number of generations before us. The pathology of the disease, according to our present views, of course I need not discuss before the gentlemen here.

(3) Organs from a case of drowning were shown by A. Primrose, with microscope slides of (a) liver, kidney, spleen and lung showing

extensive hæmorrhages. (b) A. Primrose—neuroma which should be a fibroma because of the amount of fibrous tissue, from an amputation stump. Discussed by J. E. Graham and I. H. Cameron.

(4) H. B. Anderson presented a malignant papillomatous cystic adenoma of the ovary with secondary deposits in the stomach and liver.

CASE. Mrs. —, æt. about 65. Body extremely emaciated. Abdomen very prominent. The peritoneal cavity contained a very large quantity of straw-colored serous exudation. Throughout the peritoneal cavity were many papillomatous masses—varying in size from about one inch by one-half inch in diameter—two masses the size of a pea. These masses had divided cauliflower-like extremities. They were found in large numbers in the omentum on the surface of the stomach and under surface of the diaphragm on both sides. They were all fairly firm in consistence and were free in the peritoneal cavity. The omental and mesenteric fat was of a remarkably deep yellowish or almost ochre color.

In the pelvic cavity a large tumor was found lying in front of the uterus and upper part of the vagina and behind the bladder, to which structures it was quite adherent. The tumor was soft in consistence, and on section was partly broken down internally. On its surface were numerous cysts, some of them containing clear fluid, others being almost solid from growths into their interior, the outline alone remaining.

The left ovary and tube were in proper position and the tumor was adherent to them anteriorly. The right tube contained some firm corpora amylacea. The right tube, with the atrophied remains of the fimbriated end, are present but there is no trace of the right ovary, the tumor evidently growing from and so completely replacing that organ.

Both pleural cavities contained a considerable quantity of clear serous fluid and attached to the pleura (parietal) on both sides were large numbers of papillomatous growths, quite similar to those found in the peritoneal cavity. There were no nodules in the lungs.

The stomach presented on its anterior surface a large irregularly ulcerated surface apparently cancerous.

In the liver were found several nodules soft in consistence.

The microscopic examination of the ovarian tumor and of the papillomatous nodules shows them to be of malignant papillomatous formation consisting of a central stalk of connective tissue containing vessels, etc., with irregularly shaped and sized epithelial cells arranged in several layers upon this central stem. The central

stalk branched as it grew and each branch was similarly covered with stratified epithelium.

The stomach and liver were not examined microscopically, but I think the condition in the stomach was a primary cancer co-existing with that in the ovary and producing the secondary nodules in the liver.

The trouble in the ovary evidently began as a papillomatous cyst. This subsequently took on malignant (cancerous) change with rupture of some of the cysts and implantation in the peritoneal cavity. The pleural cavities were infected secondarily through the lymphatics passing through the central tendon of the diaphragm from the abdominal cavity.

Discussion.—I. H. Cameron thought death probably resulted from terminal infection or mechanical obstruction. He thought the yellow staining of fat was probably the result of red blood cell disintegration as is found in malignant cases. Stomach is often infected secondarily from the uterus.

The direct infection of the pleural cavity from the peritoneal, though possible, is very rare.

J. E. Graham suggested that the cancer of the stomach might be primary.

Meeting adjourned.

Regular meeting held in the Biological Building, March 27, 8.30 p.m. President J. Caven in the chair.

Report of council, presented by F. N. G. Starr. Drs. Pepler, Rudolf, and Fenton, decide to leave their work for initiation till next year.

Members present, J. Caven, J. E. Graham, Starr, Hamilton, Oldright, H., Oldright, W., Carveth, Greig, Wilson, W. J., Fotheringham, McPhedran, Anderson, Amyot, Peters, Cameron, Reeve, Rudolf.

Visitors, W. Goldie, Parsons and D. K. Smith.

Dr. Graham presented specimens from a case of

ULCERATIVE APPENDICITIS WITH ABSCESS FORMATION AND HÆMORRHAGE INTO THE CAVITY OF THE ABSCESS.

History as follows :

Chinaman, aet. forty years. Patient came into the hospital on Friday evening in a moribund condition. The pulse frequent and almost imperceptible.

The patient stated that the pain commenced in the right inguinal region, followed by swelling. Owing to want of knowledge of English a history could not be made out.

The abdomen was very much swollen from the presence of gas in the intestinal tract, as well as fluid in the peritoneal cavity. The patient gradually sank and died in a few hours after he was admitted into the hospital.

Post-mortem, eight hours after death. On opening the peritoneal cavity a large quantity of bloody fluid gushed out. The omentum, bowls and mesentery were found adherent in a mass of inflammatory adhesion. No sign of tuberculosis. Three or four small abscesses were found in the mass as the intestines were removed. A cavity made up of lymph, easily broken down, was found in the lower part of the abdomen about the centre, above and behind the pubes. It was filled with clotted blood.

On removing the cæcum the appendix was found attached to the wall of the cavity just mentioned. The end of the cæcum was quite patulous and a probe the size of a lead pencil was easily passed through into the intestine. The extremity had sloughed off. The abdominal aorta was examined, and patches of atheroma were found extending throughout. No aneurismal dilatation either in the aorta or its branches. The case appears to have been one of ulcerative appendicitis with abscess formation in which a hæmorrhage had taken place into the abscess cavity. The opening into the vessel was not found.

A. McPhedran presented

A CARCINOMA OF THE STOMACH.

Patient æt. 50. Mechanic. HCl. usually present, sometimes absent. A large mass invaded the cardiac end and also several smaller ones. The pyloric end was fairly healthy, thus explaining the condition of the gastric fluids.

Discussed by J. Caven and J. E. Graham, W. Oldright presented a myxo-sarcoma from Scarpa's triangle with notes of case, and sections. Also a fibrinous mass from a bone cavity.

H. B. Anderson presented a

MALIGNANT STRICTURE OF THE ŒSOPHAGUS.

Patient æt. 60. The lumen was very small, only one-quarter inch in diameter. The ulcerated surface surrounds the Œsophagus above, but invades the lower part only on the anterior surface.

It is a squamous epithelioma in character. Glands enlarged. No other secondary growths were found. Above the stricture there was a marked pouch. There was fluid in the trachea. It had passed there in the act of swallowing. Cause of death, hypostatic congestion and cachexia.

There is a difference of opinion as to most common site of these strictures, but weight of evidence seemed to favor the upper part opposite the cricoid cartilage.

Discussion.—J. Caven says he has records of five cases. All are opposite the bifurcation of the trachea.

I. H. Cameron says he thinks the most common site is opposite the cricoid cartilage.

J. E. Graham says it is more common in the lower part.

I. H. Cameron and W. J. Greig gave the clinical history of a case of

FRACTURED SPINE.

The patient was standing on a pedestal seven feet high, throwing a belt off a pulley with a broom, which in coming around knocked him off the pedestal. He struck a post three feet away and fell on the edge of a board two feet from the ground. He was removed to the hospital, suffering severe pain in the neck on movement, priapism and paralysis as follows, described by G. A. Peters. Sensation lost from lower border of the second rib in front, also in distribution of the ulnar nerve (both sides), median nerve responded. Nerve of Wrisberg did not. Distinct response in scrotum and penis. Complete paralysis of lower extremities, both sensory and motor.

The biceps and triceps not affected. Loss of intrinsic muscles of the hand first dorsal eliminated probably the eighth cervical.

The distribution of the median and ulnar nerves could be differentiated in the hand. Death in less than twenty-four hours.

H. B. Anderson reported the following on post-mortem: Fracture extending through the cartilage between the sixth and seventh cervical vertibræ. The cord was lacerated. There was hæmorrhage in the substance of the dura mater. There was movement between the laminæ. No fracture of laminæ or of spinous processes; bodies not crushed; consolidation of most of the right lung and some of the posterior base of the left.

Book Reviews.

- A MANUAL OF SYPHILIS AND THE VENEREAL DISEASES. By James Nevins Hyde, M.D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago; and Frank H. Montgomery, M.D., Lecturer on Dermatology and Genito-Urinary Diseases, Rush Medical College, Chicago. Profusely illustrated. Double number. Price, \$2.50 net. W. B. Saunders, publisher, 925 Walnut street, Philadelphia, Pa.

The authors' names are a sufficient guarantee that the contents of this volume are purely modern and complete. A manual is not a textbook, and should not be looked upon as such, but this work embraces so much matter, so concisely put, that it covers a large amount of ground in a small space. The different subjects are not lightly referred to, but there is an absence of verbosity that is charming. We can recommend the work as a great aid. The publishers have done their part in the same thorough manner as the authors.

- A SYSTEM OF PRACTICAL MEDICINE. By American authors. Edited by Alfred Lee Loomis, M.D., late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University. To be completed in four imperial octavo volumes, containing from 900 to 1,000 pages each, fully illustrated in colors and in black. Vol. I., Infectious Diseases. Per volume, cloth, \$5; leather, \$6; half-morocco, \$7, Lea Brothers & Co., publishers, Philadelphia and New York.

The first volume of this work is to hand, and treats of the infectious diseases. Professor Loomis did not live to see the completion of the work, but he selected the authors for the various articles, and planned the groundwork of the entire system. Professor W. Gilman Thompson completed the editorial work. There are no general articles on hygiene, bacteriology, etc., nor is there any attempt to treat of the great specialties, gynecology, dermatology, ophthalmology, etc., etc. Each article is complete in itself, and a large portion of the work is wisely devoted to treatment, since, as Professor Thompson states, the main object of our knowledge is to enable us to prevent, relieve, or cure.

The first article is on malaria, and occupies 137 pages. The parasitology is treated by Professor Wm. H. Welch, of Baltimore, who gives a most exhaustive review of the work of the modern observers. The

article is a masterly one, but we believe condensation would make it more acceptable to the general practitioner.

Manson's theory that the mosquito is the extra-corporeal host of the malarial parasite is mentioned, but it appears to us that sufficient prominence is not attached to the experiments of Surgeon-Major Ross in its support. These experiments showed that the plasmodia upon reaching the stomach of the mosquito develop into flagellated bodies. He also administered to a perfectly healthy native some water in which a couple of malariaized mosquitos had died after depositing their eggs, the latter being swallowed with the water. Eleven days later the man had fever, etc., and the plasmodium was found in the blood. It is easy to conceive how man might become affected from swallowing such water or inhaling the plasmodia in dust from dried up pools. The remainder of the article is by Thayer, of Baltimore, and it would be difficult to improve upon it. Indeed, the whole subject of malaria, upon which modern research has thrown so much light, is treated in a masterly manner.

Hamilton West, of Galveston, writes the articles on dengue and dysentery, and the latter is a very clear and sensible description of the different forms of a diseased condition concerning which the majority of the profession have very hazy ideas indeed.

James C. Wilson of Philadelphia is the author of the articles on enteric fever and influenza, and it goes without saying that they are excellent. The description of the clinical phenomena is accurate, and the many useful, practical hints show how painstaking an observer he has been. For example, he states that the persistence of splenic enlargement after convalescence is established indicates the probability of a relapse. His prognosis in cases of hæmorrhage is more discouraging than that of many other observers, for he says that statistics prove that from 30 to 50 per cent. of cases in which hæmorrhage occurs die either of exhaustion or from subsequent perforation and peritonitis. His statement that choreic movements usually cease during an attack of enteric fever opens up an interesting field of enquiry as to the reason. He has very pronounced views upon the treatment, and says that clinical and pathological considerations are alike opposed to the antiseptic plan of treatment. Solid food he says should not be given until one week after convalescence is established. He is a warm advocate of the Brand method of treatment and says that it diminishes the sufferings of the individual and reduces the general mortality at least one half.

He has nothing good to say of the purgative plan of treatment and warns us against the administration of laxative drugs after the middle of the second week; he thinks also that large enemata, especially if administered with some energy, are not without danger.

He considers Pfeiffer's bacillus as the specific cause of influenza. He very properly draws attention to the fact that the accompanying pneumonia is frequently apical and occasionally runs a very protracted course—the high and irregular temperature continuing for several weeks, the rapid wasting, apical dulness, diffuse subcrepitant râles, and sweat-

ing rendering the clinical picture very like that of galloping consumption, which is also a common complication. Examination of the sputum for tubercle bacilli is imperative. We cannot agree with his statement that no difficulty attends the differential diagnosis between influenza and ordinary sporadic catarrhal fevers, but we cordially endorse his views with regard to the use of quinine which, he says, in small doses is without effect, whilst in large doses it simply augments the sufferings of the patient.

Alvah H. Doty whose position as health officer of the port of New York has given him exceptional facilities for the study of the disease contributes a very useful article on typhus.

The article on relapsing fever by Warren Coleman of New York is satisfactory.

Surgeon General Sternberg, of Washington, is an acknowledged authority on yellow fever, and his article will enhance his reputation. He does not consider it a strictly contagious disease like smallpox, but more closely allied to typhoid and cholera, the poison probably leaving the body with the excreta. The specific germ, he says, has not yet been isolated.

Cholera is described by John M. Byron late resident physician at the New York quarantine hospitals. The bacteriology is treated in the practical manner which characterizes all the articles in the volume. He has little faith in internal antiseptic treatment, and condemns the use of opium by mouth. But his experience with hypodermoclysis and enteroclysis has been very favorable. For the former he uses an ordinary fountain syringe attached to a small aspirating needle and slowly introduces from one to four pints of normal salt solution with stimulants if indicated. In extreme collapse this is repeated every hour or two. For enteroclysis he likes a 2 per cent. solution of tannic acid, or creolin of the same strength introduced slowly through a long rectal tube. He thus treated 72 cases at Swinburne Island, many of which were brought from the ship in an almost moribund state and 20 (or 27 per cent.) died; 46 others with distinct prodromic symptoms of cholera all recovered. Dr. Byron's death necessitated a foot note by the editor referring to Dr. Haffkine's experiments with preventive inoculations carried on by himself and Dr. Simpson in India. Dr. Simpson claims that the chances of death among inoculated subjects are 22.62 times smaller than they otherwise would be. If these results are confirmed this dreaded scourge will lose most of its terrors.

Wm. M. Welch, physician in charge of the contagious diseases hospital of Philadelphia, contributes four articles, viz., The Plague, Smallpox and Varioloid, Vaccinia, and Varicella. We think his statement that no specific micro-organism of the plague has been found is scarcely justifiable in the light of Kitasato's discovery of a bacillus in the blood and enlarged lymphatic glands, inoculation of animals with which caused their death with the symptoms of true plague. Nor is any reference made to the belief, prevalent in Bombay, that rats die of the plague, are

eaten by ants, and that the latter carry the bacilli to the food and water. And no reference is made to Yersin's claim that an antitoxic serum prepared by him was used with remarkable success in Amoy in 1895, many persons already comatose when the injections were made having been cured. The article on vaccinia is extremely interesting and should be read by every physician.

One of the most interesting articles in the volume is that on Epidemic Cerebro-spinal meningitis, by Latimer of Baltimore. He quotes extensively from the report on the Lonaconing epidemic of 1893, by Flexner and L. F. Barker, formerly of Toronto. The relation of the disease with the pneumococcus lanceolatus, the organism most frequently found, and its frequent association with croupous pneumonia, are fully discussed. He believes that its epidemic prevalence is "probably due to the influence of external conditions on the individuals affected, rendering them more susceptible to the pathogenic action of the infecting microbe," and suggests the possibility of other microbes or their toxins being associated with the pneumococcus and increasing its virulence.

Atkinson, of Baltimore, in his articles on Septicæmia and Pyæmia, gives a full and very interesting description of the bacteriology. He describes the symptoms of the former under the three headings—septic intoxication, septic infection, and fermentation fever and evidently the use of antistreptococcic serum finds no favour with him, for he does not even mention it.

P. Gervais Robinson, of St. Louis, contributes the article on Scarlet Fever. He inclines to the belief that "there is a disease of cows the virus of which is capable of causing scarlet fever when introduced into the human being," and says "that in all epidemics the origin of which is obscure the milk supply should be carefully scrutinized." Membranous affections of the throat occurring in the course of scarlet fever may, or may not be diphtheritic, even when they involve the whole pharynx, as well as the larynx and nose. Examination for Loeffler's bacillus is necessary, and if found the prognosis is very grave.

J. P. Crozer Griffith, of Philadelphia, contributes the articles on Rubeola, Rubella (Rotheln), Pertussis, and Epidemic Parotiditis; and they are all excellent.

One of the most important articles is that on Diphtheria, by William Hallock Park, visiting physician to the hospitals of the health department of New York city. Few men have had larger experience with the antitoxin treatment and he is a most enthusiastic advocate of its use both as a curative and immunizing agent. In view of such results as are reported by him and countless other careful observers, we do not understand how any sane and conscientious physician can any longer ignore this remarkable curative agent. And yet we know there are many physicians in this city so wedded to the past that they have not yet injected diphtheria antitoxin for the first time. Minute instructions are given for the bacteriological examination of the exudate and for the

performance of intubation of the larynx. We have no hesitation in pronouncing Dr. Park's article the best we have read on the subject.

Osler devotes 120 pages to tuberculosis, and, like the other work of this distinguished Canadian physician, it is almost beyond criticism. Space will not permit an extended review. In view of the number of sidewalk and street-spitters the following statement is comforting: "It is probable that all tuberculous sputum exposed in the open air is fully sterilized by the time that it has become desiccated and capable of transmission." Of the results of blood-serum therapy, he says it is not yet possible to speak with any confidence, although Maragliano claims most remarkable results.

A terse, practical, and splendidly-written article on "Syphilis" is contributed by W. F. Robinson, of Chicago. He does not discuss theories, but the facts are clearly stated, and the careful student of the article will find himself well equipped to diagnose and treat the disease. Doubt is expressed as to the possibility of paternal transmission to the child without infection of the mother. He claims that she is the possessor of the disease in a modified form, and as such possessor can transmit it to her offspring, and if she remains uninfected the child will undoubtedly escape, but cannot offer any explanation why the mother sometimes manifests no symptoms. We think the theory that the mother may acquire immunity through the child (somewhat as one can acquire immunity to smallpox through vaccination) without actually acquiring the disease fits in better with the facts.

Leprosy is treated by Isadore Dyer, of New Orleans, in a brief well-written article.

James Stewart, of Montreal, contributes a very interesting account of tetanus. In all cases of wounds contaminated with earth, manure, etc., he advises a thorough bacteriological examination for tetanus bacilli. Splinters of wood, rusty nails, etc., removed from a wound should also be examined. The suspected material should be injected under the skin of a mouse, and if the animal dies in two or three days with symptoms of tetanus, the patient should be injected with anti-toxic serum. If the secretions of the wound are found to contain the tetanus bacilli it may be justifiable to excise the infiltrated parts or even to amputate. If the symptoms of tetanus have set in, excision, cauterization or amputation is useless. Tizzoni-Cattani's preparation—an aseptic serum in a dessicated state—is recommended, as it will keep for an indefinite length of time. It probably has no influence on the poison already absorbed, but prevents its further development.

The presswork, printing, illustrations, etc., are a credit to the publishers.

Medical Items.

DR. F. E. GRANT has removed from Conestogo, Ont., and located in Athens, Mich.

DR. A. T. WATT has been appointed Dominion Quarantine Officer for British Columbia.

DR. GEORGE R. McDONAGH left Toronto in March for London, England, where he will remain a few weeks.

DR. IRELAND, Trinity '87, who was in Matabeleland during the uprising, and was wounded, is home for a short holiday.

SIR W. H. HINGSTON and Dr. F. G. Roddick, of Montreal, have been elected Honorary Fellows of the Medical Society of London England.

THE Board of the Ontario Medical Library acknowledge the receipt of "American System of Medicine," Vol. I., and eight volumes of Transactions of American Orthopædic Association.

DR. J. E. GRAHAM, of Toronto, went to Atlantic City, April 7th, for a short holiday. He will probably attend the Congress of American Physicians and Surgeons in Washington, May 4th, 5th, and 6th.

SIR HENRY D. LITTLEJOHN, M.D., LL.D., who distinguished himself as a sanitarian while Medical Health Officer of Edinburgh, and was for some time a lecturer on Medical Jurisprudence in the Extra-Academical School of Edinburgh, has been appointed Professor of Forensic Medicine in the University of Edinburgh, in the place of Sir Douglas Maclagan, resigned.

DR. COVENTRY, the president of the Ontario Medical Association, has appointed the following Committee on Papers and Business for the next meeting, to be held in Toronto, June 2nd and 3rd: Drs. W. A. Britton (chairman), J. A. Temple, A. H. Wright, F. Le M. Grasett, J. E. Graham, B. Spencer, of Toronto; A. D. Smith, of Mitchell; D. S. Bowlby, jr., Berlin; John Dunfield, Petrolia; J. Dewar, Windsor; C. W. Hoare, Walkerville; R. W. Powell, Ottawa; James Third, Kingston; T. F. Holmes, Chatham; R. Raikes, Barrie.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

The sixty-fifth annual meeting of the British Medical Association will be held at Montreal on Tuesday, Wednesday, Thursday, and Friday, August 31st, September 1st, 2nd, and 3rd, 1897.

President—Henry Barnes, M.D., M.R.C.S., F.R.S.E., J.P., Physician Cumberland Infirmary, Carlisle. President-elect—T. G. Roddick, M.D., M.P., Professor of Surgery in McGill University, Montreal. President of the Council—Robert Saundby, M.D., F.R.C.P., 83 Edmund street, Birmingham. Treasurer—Charles Parsons, M.D., Dover.

Addresses will be delivered as follows : Medicine—Dr. W. Osler, F.R.C.P., Professor of Medicine in the Johns Hopkins University, Baltimore, U.S.A. Surgery—Mr. William Mitchell Banks, F.R.C.S., Surgeon to the Liverpool Royal Infirmary. Public Medicine.—

The scientific business of the meeting will be conducted in eleven sections, as follows, namely :

Medicine.—President—Dr. Stephen Mackenzie, London. Vice-presidents—Dr. J. E. Graham, Toronto ; Dr. W. Bayard, St. John, N.B., Dr. J. P. Rottot, Montreal ; Dr. F. W. Campbell, Montreal ; Dr. J. Stewart, Montreal ; Dr. H. P. Wright, Ottawa. Secretaries—Dr. H. A. Lafleur, Montreal ; Dr. W. F. Hamilton, Montreal ; Dr. William Pasteur, 4 Chandos street, Cavendish Square, London, W.

Surgery.—President—Mr. Christopher Heath, London. Vice-presidents—Sir William Hingston, Montreal ; Hon. Dr. Sullivan, Kingston, Ont ; Hon. Dr. Farrell, Halifax, N.S. ; Dr. I. H. Cameron, Toronto ; Dr. F. LeM. Grasset, Toronto ; Dr. James Bell, Montreal ; Dr. G. E. Armstrong, Montreal. Secretaries—Dr. R. C. Kirkpatrick, Montreal ; Dr. Thomas Walker, St. John, N.B. ; Mr. Jordan Lloyd, F.R.C.S., Richmond Hill, Birmingham.

Obstetrics and Gynaecology.—President—Prof. W. J. Sinclair, Manchester. Vice-presidents—Dr. William Gardiner, Montreal ; Dr. James Perrigo, Montreal ; Dr. J. A. Temple, Toronto ; Dr. J. C. Cameron, Montreal ; Dr. T. J. Alloway, Montreal ; Dr. James Ross, Toronto. Secretaries—Dr. D. J. Evans, Montreal ; Dr. W. Burnett, Montreal ; Dr. A. E. Giles, 58 Harley Street, Cavendish Square, London, W.

Public or State Medicine.—President—Dr. E. P. Lachapelle, Montreal. Vice-presidents—Dr. R. Craik, Montreal ; Dr. Montizambert, Quebec ; Dr. P. H. Bryce, Toronto ; Dr. Sir James Grant, Ottawa ; Dr. R. H. Powell, Ottawa. Secretaries—Dr. Wyatt Johnston, Montreal ; Dr. E. Pelletier, Montreal ; Dr. Henry Littlejohn, Town Hall, Sheffield.

Psychology.—President—Dr. R. M. Bucke, London, Ont. Vice-presidents—Dr. D. Clark, Toronto ; Dr. T. J. Burgess, Verdun, Que. ; Dr. A. Fallee, Quebec ; Dr. G. Wilkins, Montreal. Secretaries—Dr. J. V. Anglin, Montreal ; Dr. George Villeneuve, Montreal ; Dr. J. G. Blandford, London County Asylum, Banstead, Surrey.

Anatomy and Physiology.—President—Dr. Augustus Waller, F.R.S., London. Vice-presidents—Dr. F. Shepherd, Montreal ; Dr. A. B. Macallum,

Toronto; Dr. T. Wesley Mills, Montreal; Dr. A. Primrose, Toronto; Dr. J. B. A. Lamarche, Montreal; Dr. D. B. Fraser, Stratford, Ont. Secretaries—Dr. J. M. Elder, Montreal; Dr. W. S. Morrow, Montreal.

Pathology and Bacteriology.—President—Mr. Watson Cheyne, F.R.S., London. Vice-presidents—Dr. J. G. Adami, Montreal; Dr. J. Caven, Toronto; Dr. J. Stewart, Halifax; Dr. J. C. Davie, Victoria; Dr. L. C. Prevost, Ottawa; Dr. M. T. Brennan, Montreal. Secretaries—Dr. W. T. Connell, Kingston; Dr. C. F. Martin, Montreal. Dr. Rubert Boyce, University College, Liverpool.

Ophthalmology.—President—Mr. Edward Nettleship F.R.C.S., London. Vice-presidents—Dr. F. Buller, Montreal; Dr. R. A. Reeve, Toronto; Dr. Ed. Desjardins, Montreal; Dr. A. A. Foucher, Montreal. Secretaries—Dr. W. H. Smith, Winnipeg; Dr. Jehin Prume, Montreal; Dr. T. H. Bickerton, Liverpool.

Pharmacology and Therapeutics.—President—Dr. D. J. Leech, Manchester. Vice-presidents—Dr. A. D. Blackader, Montreal; Dr. James Thorburn, Toronto; Dr. C. R. Church, Ottawa; Dr. J. B. McConnell, Montreal; Dr. F. J. Austin, Sherbrooke; Dr. Walter George Smith, Dublin. Secretaries—Dr. F. X. L. DeMartigny, Montreal; Dr. J. R. Spier, Montreal; Dr. C. R. Marshall, Dowling College, Cambridge.

Laryngology and Otology.—President—Dr. Greville Macdonald, London. Vice-presidents—Dr. W. Tobin, Halifax; Dr. G. A. S. Ryerson, Toronto; Dr. H. S. Birkett, Montreal; Dr. G. R. McDonagh, Toronto. Secretaries—Dr. Chretien, Montreal; Dr. H. D. Hamilton, Montreal; Dr. W. Permewan, 7 Rodney street, Liverpool.

Dermatology.—President—Mr. Malcolm Morris, London. Vice-presidents—Dr. J. E. Graham, Toronto; Dr. F. J. Shepherd, Montreal; Dr. J. A. S. Brunelle, Montreal; Dr. J. L. Milne, Victoria. Secretaries—Dr. Gordon Campbell, Montreal; Dr. J. M. Jack, Montreal; Dr. James Galloway, 21 Queen Anne street, Cavendish Square, London, W.

OBITUARY.

GEORGE DAVID POLLOCK, F.R.C.S.—Mr. G. D. Pollock, Surgeon in Ordinary to the Prince of Wales, Consulting Surgeon to St. George's Hospital, died February 16th, 1897. It may be of interest to many Canadians to learn that this distinguished surgeon was for some time attached to the person of Lord Metcalf when the latter was Governor-General of Canada.

THOMAS EDWARD SOUTH, M.B.—Dr. Thomas E. South died at his late residence, Cainsville, April 7th, 1897, aged 31. He received his medical education in Toronto University, and graduated in 1893. He was a very good student, and took a high standing at all the annual examinations. At the final examination he was second on the list, and was awarded the first silver medal. He was appointed a resident

assistant in the Toronto General Hospital in June, 1893. During the last three years he was practising at Cainsville, in Brant county.

JOHN W. ROSEBRUGH, M.D.—Dr. Rosebrugh died at his home in Hamilton, Thursday, March 25th, after a short illness from septicæmia, following la grippe. He was 69 years of age, but he was a hale, well-preserved man, and seemed likely to be good for active work for many years to come. The news of his death was a great surprise to his many friends, most of whom had previously heard nothing about his illness. He became a Licentiate of the Medical Board in 1852, received the degree of M.D. from the University of New York in 1853, also M.D. from the University of Victoria College in 1855. Early in his professional career he met with success, and obtained a large practice in Hamilton. He acquired a widespread reputation as a gynæcologist, and was one of the pioneers in abdominal surgery in Canada. He was an earnest worker in various medical societies, especially the Canadian and the Ontario Medical Associations. In 1887 he was elected president of the last-named society. In his private life he was highly esteemed by those who knew him intimately.

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Original Communications.

GLANDULAR FEVER OF CHILDREN.

BY ALEXANDER MCPHEDRAN, M.B.

TORONTO.

FROM time to time during the last few years, I have met with cases of febrile disturbance in children, with enlargement of the glands, for which no cause could be assigned. The following case is the most characteristic, and will serve as the basis of a few observations on the disease, or on the symptom group, if it is not entitled to rank as a disease.

Douglas M., aged 4, a strong, healthy boy, fell ill on January 16th last. He became feverish, refused food, was thirsty, and complained of pain in the neck, especially the left side. There were some pains in other parts. When seen on the 17th the temperature was 102.5 F. He sat with the head held fixedly, refusing to allow it to be turned to either side. The neck was

tender, and the glands along the anterior margin of the sterno-mastoid muscle of the left side were enlarged, firm, and tender, the gland at the angle of the jaw being most affected; it was quite large and sensitive. The glands on the right side were not affected, and those in other parts of the body showed no change. The pharynx and tonsils were slightly reddened, but not painful nor swollen. Movement of the jaws or swallowing did not give pain except as the neck was disturbed. The bowels were constipated, requiring rather large doses of medicine to move them. The tongue was coated, and there was no appetite. He slept fairly well. The spleen was palpable below the costal margin.

Calomel, followed by salines, was given to move the bowels, and phenacetine for rest and comfort. Next day the condition was about the same. The glands on the right side of the neck were somewhat swollen, but never attained the size of those on the left side. On the 19th the temperature was normal and the left cervical glands were smaller, except the one at the angle of the jaw; it was rather larger. Next day this gland had increased in size slightly, and was tender, and the temperature was slightly elevated again. The neck was more freely moveable. The other glands were becoming reduced in size. It was feared that suppuration had begun in this large gland. A coating of iodoform in flexile collodion was applied to it. Two days later (22nd) the temperature was normal and the gland slightly reduced in size. The neck was moved with more freedom, and there was general improvement. There was quite marked anæmia; it required a couple of weeks before the gland was restored to its normal condition.

There were two other boys in the family, eight and eleven respectively, but neither of them became affected. Three weeks later the eldest took mumps; the contagion spread to the second boy, and later the youngest, who had just recovered from the glandular fever, passed through a well-defined course of the disease, showing that the glandular affection afforded no protection against the parotitis.

The history of this case gives a fairly accurate description of the affection known as glandular fever. It was first described in 1889 by E. Pfeiffer,* who claimed that it was an acute specific fever until then unrecognized and gave it its name. The affection occurs in children under fourteen years of age. It sets in suddenly; the temperature is raised to even 103° or 104° F. There is loss of appetite, thirst, coated tongue, constipation, and severe general pains.

* Jahrbuch für Kinderheilkunde, Band xxix.

The neck becomes stiff and painful early, with tenderness along the anterior margin of the sterno-mastoid muscle on the left side, where, by the third or fourth day, the glands at the margin and underneath the middle of the muscle are found tender and enlarged. There may be slight redness of the fauces, but no swelling, and the redness soon disappears. The head is held rigidly. After three or four days the swelling of the glands begins to diminish. By this time those on the right side become enlarged and may in a day or two reach a size as large as that attained by those on the left side. There may be marked tenderness in the abdomen and the mesenteric glands may be found enlarged. The liver is enlarged in the great majority of cases and the spleen in more than half. The other cervical, the axillary and the inguinal glands may be affected. The disease runs a benign course, rarely terminating fatally, but the child is left in an anæmic state from which it may take some weeks to recover.

Even were the history of the affection more marked it would not be sufficient to prove it a specific disease. To do that it will be necessary first to find its specific cause. The bacteriology of it has not yet been studied. There is much difference of opinion as to the pathological basis on which the symptoms depend. It has been suggested that there is infection by an "attenuated" streptococcus through the tonsils. This, if true, renders the view that the affection is an acute specific one untenable. As the mesenteric glands are often swollen it has been thought that possibly absorption takes place by the intestine. The early affection of the left cervical gland led Koplik to suggest the thoracic duct as the seat of absorption. Even if it were it is scarcely clear why the left cervical glands should be earliest invaded as they are not in the track of the lymph currents from the duct.

On the whole the pharynx seems the most likely avenue by which the poison gains access to the system, but it may possibly be absorbed by other parts. That it is infectious can scarcely be doubted from its limited epidemic character, its constitutional effects, its uniform course, its benign history, the invariable disappearance of the glandular tumefaction without suppuration, the marked anæmia and rather protracted convalescence.

Of recent papers on the subject the most important are those by Park West, who reports ninety-six cases occurring in Eastern Ohio, in the years 1893 to 1896, and* by Dawson Williams† who reports three cases occurring in one family. In those reported by West, the

*Archives of Pediatrics, December, 1896.

†Lancet, London, January 16, 1897.

symptoms were generally typical, and all recovered except one, a delicate child, convalescing from scarlet fever. In none of them did the glands suppurate. The duration was from nine to twenty-seven days. The anæmia was marked and convalescence protracted. The incubation was about seven or eight days.

The treatment is purely symptomatic ; no remedies appear to have any specific effect on the cause or duration.

HOUSE SERVICE IN NEW YORK HOSPITALS.

BY DR. F. S. VAUX.

Residing Surgeon, Mount Sinai Hospital.

NEW YORK,

IN reply to enquiries regarding the hospitals of New York, the character of their service, and the requirements for admission as resident assistant, this paper has been prepared, and it is hoped that it may furnish the desired information.

The city of New York is divided for ambulance work into many districts, and a complete set of rules has been prepared to govern the admission of emergency cases into the hospitals.

A *per capita* grant is made for all such cases, and naturally those institutions which maintain ambulances are only too anxious to secure their share. Partial or over-zealous constables might cause considerable friction by calling the same ambulance for a succession of cases, or by summoning one from a favored but distant hospital. To avoid these contingencies, the policeman summoning an ambulance is limited to those in his own district, and in calling them must observe a certain rotation. Full telephone communication is provided, and as ambulances here, as in all large cities, have right of way over all vehicles, the response is pretty prompt.

Usually the facilities are ample, the ambulances responding to about seventy calls a day, but any epidemic taxes them severely. Such an one was the heat plague which raged last August for ten days, during which time 1,300 persons died and thousands were prostrated. At that time the police patrol wagons were put on service, each with a surgeon and assistant. They did good work, and it was suggested that ultimately police ambulances would be substituted for the hospital ones, but so far the plan has not matured.

Naturally, the hospitals are grouped in certain neighbourhoods, and in this respect the uptown movement has been marked, and will continue to be so. Hudsons' (Chambers St.) Hospital maintains one of the largest emergency services in America, and indeed one of the greatest in the world. Situated near City Hall, and in the busiest

portion of the city, the accident cases are so numerous as to constitute almost its entire service.

The Good Samaritan Dispensary, New York Hospital, Bellevue, St. Vincent's, and the Charity are the principal down town ones. Fifty-ninth street is the official boundary line between up town and down town, so that Roosevelt, situated on this street, might be classed as either. It really is an uptown one, and grouped with The Woman's, Mount Sinai, The Presbyterian, and the German Hospitals. Up on Morningside Heights, near the magnificent new buildings of Columbia, is St. Luke's, which with the Haslem, and other smaller ones, supply the neighborhood.

So much for a general view of the various hospitals; any further description would be out of place, and information to that effect must be found elsewhere. All the above mentioned institutions, and a host of additional ones, require a large number of young men as resident assistants, and for this purpose examinations are held yearly or semi-annually. A graduate desirous of acquiring a practical experience, has therefore a large field to choose from, and it is by no means rare for a man to avail himself of this fact, especially if successful in his first attempt. But as a usual thing the ambitious student, on entering college, looks carefully over the various hospitals, notes the character of their service and the opportunities offered, to say nothing of his own chance of success, and after settling upon one, works steadily for it during his entire course. If unsuccessful, he may, of course, try for another, as there are about 68 or 70 positions open yearly for competition.

By an agreement, however, entered upon last year between New York, Roosevelt, St. Luke's, and the Presbyterian Hospitals, these four held their examinations simultaneously on May 6. The quiz system is very popular here, and although the work is along general lines for the most part, yet during the last month the style of questions, etc., in certain hospitals, are studied, and men prepared more particularly for them. Formerly, when candidates were fewer and hospital positions less sought after, the appointments were made partly by examination and partly by influence; but now the latter feature is being rapidly eliminated. This is, indeed, a necessary act of self-defence on the part of the examining committee, as the agencies at work for a candidate were innumerable, and for months preceding, the examiners were besieged by letters and the friends of applicants. Now, in many hospitals, even the time-honored "letter of recommendation and certificate of moral character" is tabooed, though in others the farce is still kept up. A farce it certainly is, for

he is indeed a sorry specimen who has not got at least one friend that believes him everything which the committee could require. Either an appointment should be solely the gift of the director, or else be put up for an honest, non-partisan competitive examination, without reference to influence or testimonials. This latter plan is fast being adopted, and indeed, in one well known hospital, the chairman of the examining board expressed himself thus : " If a man brings a letter to me, I tear it up, and examine him all the more closely."

The appointments, however determined, are on the average, four in number, two commencing each six months, to fill the places of the retiring house surgeon and house physician. This retiring system is essentially American, and characterizes all their upper legislative bodies. Of this system I shall speak later, and compare it with that which prevails elsewhere. At present I will describe the system as one finds it, at the same time giving the daily routine of a large hospital, such as Mount Sinai.

As a rule the successful candidates in the order of merit of their examination may select either one of the following positions :

- (1) A service of eighteen months upon the medical division and six months upon the surgical, commencing July 1.
- (2) A similar service, commencing January 1.
- (3) A service of eighteen months upon the surgical division and six months upon the medical, commencing July 1.
- (4) A similar service, commencing January 1.

It will be seen therefore, that whatever service is chosen, a man gets a practical experience on the alternate one. This is a wise provision, for the surgeon must make physical examinations of his patients, and the physician will often be called on to do work requiring the most absolute asepsis and antisepsis in addition to surgical technique. Let us suppose a man to be appointed to the surgical division and commencing on the medical wards as junior provisional ; he accompanies the house physician and visiting physicians on their rounds and does such ward work as is allotted to him. There is also laboratory work, including a good deal of blood examination, besides the microscopic examination of sputa fæces, etc., and the careful and thorough analysis of stomach contents. At the expiration of six months he becomes junior on the surgical service, and has special charge of the eye and ear wards. In the mornings, rounds are made and dressings done. In the afternoon, the operating theatre claims his attention daily, from 2 to 6 p.m., here he is second assistant and administers anæsthesia to private patients.

In Mount Sinai more than in any other hospital, the house surgeon gets a good number of operations for himself, some abdominal work being generally included. He also has the opportunity of doing some rarer work, such as the catheterization of the ureters.

For the first half of his second year he serves as senior, and begins to face the responsibility which rests upon the house surgeon. His share of the work in the operating room is the handing of instruments, no light task when sixteen different operations may succeed each other in an afternoon. When the house surgeon operates the senior assists him and in his absence assumes charge of the entire service. It is essential, therefore, that he have a most exact knowledge of the cases, and in this respect he prepares himself for the arduous duties of the last term.

Once house surgeon he assumes a dignity and importance only previously dreamed of, finding himself first assistant in the most important and difficult operations, and in sole charge of about 120 patients. From morning to night he has scarcely a moment to himself and is under a constant mental strain. Yet it has its compensations, for, apart from the magnificent experience he acquires, a good deal of actual surgical work falls to his share.

A house surgeon will have on an average a dozen laparotomies, fifteen or twenty herniotomies, a total of 100 hemorrhoid operations and curettements, and minor gynæcological surgery. He also gets bone cases, and ward surgery of all kinds and has the opportunity of doing rarer work, such as the catheterization of the ureters.

At the conclusion of his course, the custom in Mount Sinai, is to present him with a silver mounted surgical bag and a good assortment of instruments in addition to the usual diploma.

It will not be necessary to go into the details of the medical work as this is practically the same in all hospitals. Suffice it to say that the house physician enjoys the fullest confidence of the visiting physicians, and has the treatment of about 100 patients practically in his own hands. His opportunities for acquiring special skill in diagnosis are thus very great and are made the most of. At the expiration of this service he receives the same present from the hospital as his confrere on the surgical side.

Having thus briefly described the "retiring system," as found in Mount Sinai and the majority of American Hospitals, I will endeavor to compare it with the annual appointment system which prevails in others. Opinions differ as to the merits of these systems and I have endeavored to tabulate the various arguments for and against them, as follows :

ADVANTAGES OF THE RETIRING SYSTEM.

- (1) The concentration of authority and responsibility in one who has had ample experience and careful training.
- (2) Four thoroughly trained and well equipped men are sent out from the hospital annually, where otherwise there would be ten or twelve graduates needing a course of further training.
- (3) Privileges in operating in the treatment of cases are willingly afforded to a man of eighteen months' previous training, which would not be given to one whose whole term was but a year.
- (4) These privileges attract a superior class of men, those who are ambitious and are willing to be subordinate for a considerable time in order to attain them.

DISADVANTAGES OF THE RETIRING SYSTEM.

- (1) It tends strongly to take from all save the house surgeon* that keen interest which comes from a sense of responsibility.
- (2) Junior members of the staff, while not having any voice in the treatment of the patients, are nevertheless expected to be thoroughly conversant with every case, its history and progress.
- (3) So that at any moment they may accompany one of the visiting staff, and give an intelligent account of the cases. On the surgical service this information has to be acquired almost entirely on morning rounds, as during the afternoon the operating-room demands their attendance. As an average surgical or medical service is about 100 beds, with but few chronic cases, the demand is certainly very great.
- (4) The service is entirely what the house surgeon makes it. If he is smart and quick in his work, pleasant and courteous in his dealings with his staff, and instructive in his remarks on the cases, the service will be one of great value and very pleasant. If these qualities be lacking in part, or altogether, the service suffers in these respects, and the work drags correspondingly.
- (5) The work cannot be materially lightened by the addition of men to the staff, for each one has to accompany the house surgeon on his rounds as well as to be present at every operation. It is the amount of time consumed in looking on while someone else does the work which makes a man tired and lessens his interest.

ADVANTAGES OF THE ANNUAL APPOINTMENT SYSTEM.

- (1) It develops that self-reliance and confidence which characterize the older practitioners, and which only comes from actual responsibility.

*For the sake of brevity the term "house surgeon" will be understood to include "house physician."

(2) When the staff are all on the same footing there is an *esprit de corps* and good fellowship which is harder to cultivate in a graded system.

(3) From the first the men begin to consult one another over their cases, knowing that their time is short and the opportunities golden.

(4) Ten or twelve men get a good practical course each year where otherwise four specialists would be graduated.

DISADVANTAGES OF THE ANNUAL APPOINTMENT SYSTEM.

(1) Men on entering the hospital have the same privileges and responsibilities as at the expiration of their term.

(2) In consequence these privileges and responsibilities are cut down to a minimum, especially on the surgical service, where one cannot attain to the dignity of first assistant or do even minor surgery himself.

(3) The ambitious man, who knows his own weak points and is anxious to continue on, is forced to leave just when he is beginning to appreciate the opportunities to be afforded him by another year's work.

(4) There being no senior to direct them, men fresh from college are unable to derive the amount of benefit from their work they otherwise would. Also errors in diagnosis and treatment are more likely to be made, thus militating against the best interests of the hospital.

In the above paragraphs I have endeavored to summarize the chief points to be considered in a comparison of hospital services.

To judge between these two systems is no easy matter, and still more difficult would it be to say which might be the better to adopt. Indeed no absolute rule can be laid down; each hospital must decide for itself as to which system will serve its end best.

The service which might answer in a hospital where one surgeon operates alone for six months might be well suited by a system which makes the house surgeon and his assistants practically the operator's own staff, and yet would never work in a hospital where four or more surgeons were continuously on duty and present every day.

The character of the hospital work must also be taken into account, and any special features. An institution which is essentially a teaching one, with hundreds of students in daily attendance, makes demands upon the staff, both visiting and resident, which can only be met by special measures. Fortunately we are now limited

to the above systems, but can devise whatever seems most fitting. From personal experience of both systems I am strongly in favor of one which retains the special features of our Canadian hospitals, and yet secures the supervision of a more experienced man. Briefly it is as follows:

(1) Retain the ward system, making the men in charge of them responsible for the histories, ward routine and minor treatment, also insisting on thorough blood work and urinalysis.

(2) Limit the number of patients under each junior physician to thirty; hospitals gain in the end by it, through the better attention the patients receive.

(3) Abolish all clerical and dispensary work from the course, thus giving a longer time on the wards, and confining these branches to those to whom they more properly belong.

(4) At the end of the year hold a competitive, practical examination, embracing physical diagnosis and laboratory work, appointing the three men who show the most intimate knowledge of their cases, and possessing the best technique, as house surgeon, house physician, and house gynecologist. Choice to be given in order of standing.

(5) The three so chosen would commence their second or senior year's work simultaneously with the new staff, and would have the entire charge of their respective services. They would visit the wards, accompany the attending staff, and assist them in all operations. They would also be held responsible for the new men, and direct their work.

The visiting staff could then know that the routine of treatment would not be disturbed at intervals, and thus their work be much lightened.

The fortunate ones appointed to these positions would leave at the close of their second year, finished men in their respective departments.

I am aware that it is difficult to change old customs, and I know that under the system in vogue most excellent work is done, yet from actual experience and close observation I am convinced that in a modification as described above lies the ideal system.

In conclusion, it may interest some to know about the requirements for admission to the principal New York hospital—Roosevelt.

The service here is divided into a general and gynecological. The former embraces medicine and surgery, and is conducted in the usual manner; a written paper first, on which a candidate must make

a certain percentage to be allowed to compete in the oral examination which is held next day.

Time of examination, latter part of May; average number of candidates, thirty; vacancies, four.

The gynæcological department has an entirely separate service, and there is but one vacancy. To fill this an examination is held annually in December; it is oral, consisting of about twenty questions, embracing every possible point in gynæcology, and is very severe. The candidate appointed serves six months as senior and second assistant. The last half of his term he is house gynæcologist, and is first assistant at nearly every operation; average number of candidates, four. A previous hospital experience of at least one year is required.

Mount Sinai. Competitive examinations, without reference to religion or nationality, are held annually. This year the written examination commenced on April 7, and the oral on April 8. Each examination consists of about twenty-five questions, embracing the principal branches. Five appointments are open; the average number of competitors is fifty.

New York Hospital, the Presbyterian, and St. Luke's hold their examinations simultaneously with Roosevelt. The services are practically the same, and each hospital offers four appointments. From thirty to forty men compete annually.

The Woman's Hospital is, as the name implies, gynæcological. The trustees hold semi-annual examinations—Jan. 1 and July 1. Letters as to moral character, etc., must be furnished.

The length of service is eighteen months, and here, as elsewhere, a diploma is given on graduation. The examination is oral, lasts about half an hour, and is intended to show a man's general knowledge. Two vacancies are open semi-annually. The house surgeon does not assist at all operations. This fact may account for the small number of candidates, usually five or six.

Bellevue. The service here is complex, and consists of four divisions—one for Bellevue students, another for University of New York, a third for graduates of the College of Physicians and Surgeons, and the last one is open for outside competition. Each of these divisions embraces medicine and surgery. The examination is held late in May, and about sixty men present themselves for it.

Allied to Bellevue is the Charity Hospital and the Island services, both affording large opportunities for practical experience.

Selected Articles.

THE RELATION OF LAW TO INSANITY.

DR. R. M. Bucke, Medical Superintendent Asylum for Insane, London, in the course of his highly interesting annual report, makes the following pertinent remarks upon the relation of law to insanity.

As is well known to all persons, such as criminal lawyers and experts in insanity, whose calling requires them to take part in trials for crime, the law as at present existent in England and Canada rests upon answers by the judges to certain questions put to them by the House of Lords in the year 1843; such questions having arisen in the course of a debate in that House upon the trial of McNaughton for the wilful murder of Edward Drummond. In the course of these answers, which are too long to be quoted *in extenso*, the judges say: "To establish a defense on the ground of insanity it must be clearly proved that at the time of the committing of the act the accused party was laboring under such a defect of reason from disease of the mind as not to know the nature and quality of the act he was doing, or if he did know it that he did not know he was doing what was wrong." And this is virtually the law in Canada (as well as in England) to-day, the above sentence having been admitted almost verbatim into our criminal code of 1892 in the following clause: "No person shall be convicted of an offense by reason of an act done or committed by him when laboring under natural imbecility, or disease of the mind, to such an extent as to render him incapable of appreciating the nature and quality of the act or omission, and of knowing that such act or omission was wrong." So stands the law, and it is as certain as anything can be that under it irresponsible lunatics are year by year convicted of murder and hung. For of what use is it that the committer of the act shall know (as nearly all committers of such acts do) its nature and quality and that it is wrong if, through mental aberration, the result of the disease, he is irresistibly urged to commit it? or if his self-control is

by the same cause so undermined that provocation (perhaps quite trivial) being given, or temptation existing, he simply cannot resist the impulse to commit it.

In order to specifically test the value of the above criterion of responsibility laid down by the law of England and Canada, I, during the months of April, May, and June last past, examined every patient during that time resident in London Asylum, the total number aggregating one thousand and thirty-four persons, five hundred and sixty-nine of whom were women and four hundred and sixty-five men. I found that of these patients seven hundred and sixty-three were able to realize and appreciate the nature and quality of such an act as homicide, and to understand that such an act is wrong and wicked. In some of these persons the appreciation and realization while clearly existent was dimmed and blunted by the disease present, but in much more than half of them such appreciation and realization was as vivid as it is in the ordinary healthy man and woman. Of the remaining two hundred and seventy-one patients I found that one hundred and twenty-one, while fully able to express an opinion on the subject, seemed (either *ab initio* or as a result of their diseased state) destitute of moral feeling, and these disclaimed any sense of repulsion from such an act as well as any feeling or knowledge of its wrongfulness. The other one hundred and fifty patients (making up the full number) could (for various reasons) give no, or no intelligible, answers to the questions propounded to them. The reasons for this inability were various—a few of the patients were deaf mutes, others were aphasic, some were obstinate and would not speak, still others were debarred from speech by their delusions, and a considerable number were so demented that they were unable to understand the questions. The main fact is that of 1,034 patients, 763 (nearly three-quarters) are, according to the law of the land, responsible for such an act as homicide, and under that law would be liable to be executed for such an act. But the law of the same land says that these are not responsible men and women, that they are not capable of the responsibilities of life, and locks them up, many of them for life, in an asylum. The law cannot be right in both these (contradictory) assumptions. Not one of these 763 persons could legally, even if he were discharged from the asylum, or had never been admitted into it, his mental condition remaining as it is, sell a farm, make a will, or devote money which is rightfully his to any purpose, however good, to which he may desire to appropriate it—for all such and similar purposes these people have no standing before the law, but any one of them might, unless the accident of being committed to an asylum should save

him, be legally tried, convicted, and hung for a so-called crime by him committed. For his own purpose, from the point of view of the civil law, he is irresponsible, incompetent; from the point of view of the criminal law, on the other hand, he is responsible, competent. Is not this an anomalous and hard position for the lunatic? Where he wishes to be responsible and competent, the law says no, you can be and are neither; where he wishes not to be competent and responsible the law says, you are both.

It may be (as intimated above) that the lunatic confined in an asylum at the time of such homicide as supposed would not or could not be convicted of murder and hung, the point is that men suffering with the same disease and to the same degree as these are placed in the position which I have pointed out. But why should the bare fact of having been sent to an asylum make this immense difference in amenability to law? The committal to the asylum did not make the patient any more insane. Lunatics outside asylums are as truly mad and as truly irresponsible as those confined within these institutions. Many lunatics (as insane as any) are never sent to an asylum, and many others not until they have been insane ten, fifteen, and twenty years, and not then because they are more insane than they have been for years, but (probably) because the family has become impoverished by the continued care of the patient, because someone who had special care of him had died, or for some similar reason.

And the fact of the man's insanity and absolute irresponsibility, even as this is defined by the law, may, and probably will have no effect in saving him from a conviction. Only the other day in Canada a man was so found guilty and sentenced to death who was not only a lunatic (he having both delusions of persecution and aural and visual hallucinations) but was also congenitally imbecile to such a degree that according even to the words of the code he was irresponsible. In that case the facts of mental incompetency were so patent that the experts brought by the Crown to combat the evidence given for the defense declined to enter the witness box, thus acknowledging that the evidence given for the defense was unassailable. In spite of this the prisoner was found guilty and sentenced to death. Had this man been (as he ought to have been) an inmate of an asylum and there committed the same (so-called) crime he probably would never have been even tried—and it was not his fault that he was not in an asylum. Or had this man, being (as he was) at large, entered into a contract or made a will, and had the validity of such business transaction been questioned in a court his competence would undoubtedly have been denied.

TRACHEOTOMY vs. INTUBATION.*

BY DR. SEVESTRE.

Physician to the Sick Children's Hospital, Paris.

SINCE its introduction and employment successfully by Bretonneau, afterwards brought into common use and given an honorable position by Trousseau, tracheotomy has remained the only means at our disposal for overcoming laryngeal asphyxia in croup until the last few years.

In 1858 Bouchut proposed, under the name "tubage of the larynx," another method consisting of introducing, through the mouth, a tube into the larynx and thus re-establishing the air passage. In a paper presented before the Academy of Medicine, Bouchut reported two cases which appeared to him to establish :

(a) The ease with which tubage could be performed, the tube being held in place by the inferior vocal cords and not interfering with the function of the epiglottis.

(b) The tolerance of this tube by the larynx.

(c) The possibility of overcoming asphyxia by this means in preference to tracheotomy.

(d) The ease with which large collections of false membrane formed in the trachea and bronchi can pass out by this tube.

(e) The usefulness of this resource to physicians, who, in small villages far from help, can employ this method.

The new invention was violently attacked by Trousseau. The apostle of tracheotomy could not allow anything to lessen the importance of an operation which he had, after great exertion, succeeded in pushing to the front in the treatment of croup. He brought into the fight all the resources of his powerful intellect, and backed by an authority which could not be denied, despite the opposition of Malgaigne, he succeeded in obtaining a vote from the academy embracing the following conclusion :

(a) Tubage, as at present used, does not appear to us as sufficiently useful or sufficiently free from danger to merit the approval of this academy.

* Translated from *Progres Medicales* by W. J. Greig, B.A., M.B.

(b) Tracheotomy, in the present state of science, is the proper thing to do when there is no longer any hope from the employment of medical methods.

These conclusions, reached after a long discussion, were considered by everyone as a formal condemnation of intubation. It must be remembered, however, that there were certain reservations, as if they feared the development of the future, and as if it was evident that the instruments of Bouchut were far from being perfect, and that his observations were neither sufficiently numerous nor sufficiently conclusive to carry conviction, and that, in brief, the method had not been sufficiently tried. During the discussion Malgaigne had used these words: "What an example does the history of lithotrity give us! Who knows but that tubage may be some day for croup, what lithotrity is to-day for stone in the bladder?"

Events justified his words. In 1881, O'Dwyer, a New York specialist, conceived the same idea as Bouchut, and without apparent knowledge of the work of the Frenchman, invented, or rather re-invented, tubage under the name of Intubation of the Larynx. But better-advised and more patient he did not hurriedly publish his method. He worked with zeal, obtained the best combination of instruments, and perfected his method to such an extent that within the last few years it has been used over the whole world without any important modification. When he had collected an imposing number of favorable results he announced the principles and the application of his new methods. Thus, while the discovery of tubage is due to Bouchut, the popularization of the method is due to O'Dwyer. He is more than a popularizer, and it is only fair to say, as they said at the Berlin Congress, tubage has two fathers, Bouchut and O'Dwyer.

Intubation was practised at once in America, and was not slow in almost completely replacing tracheotomy. Since, it has spread in England, Germany, Austria, and Russia, but has few advocates in France, where very few attempts have been made to use it. Jacques (of Marseilles) was the only one to regularly use it for a long time, whilst it made headway in Italy, Spain, and everywhere except France, until the end of the year 1894. At that time serum-therapy was being used by many physicians, and a new era began in the operative treatment of croup. The operation was nothing more than an expedient to prevent the patient dying asphyxiated, but did not hold out to him the hope of ultimate recovery by its assistance. It was used simply as a means to gain time, to prolong life until the serum began to act and could save him. Generally two or three

days were gained, often only twenty-four hours, and under these circumstances if this could be accomplished without injury the advantage was not to be despised.

Thus tubage, so far very little known in France, began to be used. The first attempts were few in number ; but quickly tubage began to supplant tracheotomy. In Paris, for two years past, in the two children's hospitals, tubage is the rule, tracheotomy the exception.

It seems to us that the moment has come to compare the two methods, judging from our experience in the two children's hospitals. From statistics compiled by M. Gillet, Prescott, and Goodthwaite, making a total of 48,690 cases, the result was practically the same in the two operations, viz : Thirty per cent. of recoveries. This was prior to serum-therapy. Statistics subsequent to this cannot be obtained because, practically, tubage is the only operation performed ; tracheotomy being done in cases where intubation was impossible or did not relieve the child.

It is different, however, when we study the elements of danger which enter into each operation, either at the time or subsequently. Tracheotomy is often difficult and futile in unforeseen accidents. A trained and experienced operator will generally triumph over all difficulties, whereas a physician possibly months or years without experience will often fail. If he does not make his incision with absolute precision, if he deviates ever so little from the median line, he will commit an irreparable error, and will thus seriously affect the final result. The end will be the same if his assistant does not hold the head immovable, perfectly straight, extended enough, but not too much. Hæmorrhage may occur, syncope, asphyxia, or apnoea. Even after the introduction of the cannula, the child may remain for some time in a state of apparent death, requiring every effort to resuscitate him. In short, the clearest and most experienced operator is never certain of a successful result. Archambault, with his enormous experience, always took the precaution of informing the parents that the child might die in his hands.

As to tubage, it is much easier. Assuredly it is also a delicate operation, requiring great precision. But if one has taken care to train his hand, and if he proceeds with gentleness and care, he can not meet with any serious result. Two conditions are essential to do tubage well. The index finger of the left hand must possess great delicacy of touch, so that it can be quickly hooked around the epiglottis, the arytenoids serving as landmarks. The right hand, holding the introducer, must be trained to hold the instrument with-

out stiffness, and with an easy grasp, yet firm enough to assure precision of movement. It is an easy matter to train the left index. For the right hand, it is important to accustom oneself to manipulate the instrument and to perform the proper movements under the eye, finishing on a phantom furnished with a rubber larynx or in the cadaver. With such a training it is safe to practise on the living. The most frequent accident with beginners is to intubate the œsophagus. It is, then, easily seen that the child is not relieved, and also that the weight of the instrument in the gullet gradually draws the thread downwards. False passages in the larynx may result in hæmorrhage, but this can only occur where the manipulations are rough and awkward; vomiting produced by the tube in the larynx must be mentioned; fainting may occur as in tracheotomy, but it depends more on the state of the child than on the operation.

Increase of dyspnoea may follow tubage owing to displaced false membrane. This is a grave accident, but it generally happens that on withdrawing the tube, the child will cough violently, and reject the membrane. Following this also relief may be sufficient for a time to enable us to do without the tube. On the other hand, if a second attempt to intubate does not succeed, it will be necessary to do tracheotomy. This, however, is rarely necessary. To conclude, intubation is easier to do than tracheotomy, and there is less danger from serious accident. Moreover, the incision in tracheotomy gives an absorbing surface from which secondary infections may occur, and it is true that broncho-pneumonia is more frequent after it than after tubage. Again, when for pulmonary or other causes it is necessary to use cold applications to the neck and chest, the opening in the trachea is an insuperable barrier.

No matter how superior tubage may be to tracheotomy, there is one point which must not be forgotten. It must be insisted on. After the latter the child can be left to the care of the mother or of an intelligent nurse. Nothing is necessary but to remove the internal cannula if it becomes blocked. Instructions relating to food and air are easily followed. After tubage, the child must be the object of *very special care*. Not only on account of the difficulty in swallowing which can be overcome by certain artifices, but most serious accidents may occur. The tube is quite commonly rejected. Sometimes along with it a quantity of membrane is thrown off, which will enable the child to breathe easily, yet more often the tube must be instantly reinserted. Again, the tube may become blocked either slowly or suddenly.

False membranes detached from the trachea or bronchus by the

influence of serum can generally pass through the tube, notwithstanding its small calibre. But sometimes the tube becomes blocked suddenly at the lower end. The tube must then be removed. If that were all, the method of doing this could be taught to the nurse, but often it is necessary to re-intubate and for that a physician is necessary. When the obstruction occurs slowly, by successive deposits of mucus or debris of the false membrane on the inner face of the tube, the danger is less urgent, but exists nevertheless.

In short, an intubated child should always be under the direct and immediate care of a physician who can intubate or of other persons who can do the operation.

This is possible in a hospital when the interne can be on the spot in a few minutes; besides, it is necessary that the ward-guard must not be far away and moreover that other persons in the hospital service should be practised in intubation, to be performed at the first sign of obstruction of the tube.

But in a town or country practice where the physician cannot remain for two or three days at least, by the bed-side, intubation should be renounced in favor of tracheotomy.

Tracheotomy may be useful on certain other rare occasions. It sometimes happens, that from a very severe laryngeal spasm or other reasons that the tube cannot be put into the larynx. If after several failures, the necessity still exists, tracheotomy should be done before the child becomes exhausted.

Also in those cases where the child is not relieved by tubage, perhaps from the existence of membrane in the lower part of the trachea or in the bronchus. Under these conditions it is to be feared that tracheotomy will not be more successful than intubation, but it should be tried.

Tracheotomy is also indicated where there is reason to suppose, either before or after tubage, that the trachea contains much mucus or large masses of false membrane, which would be very apt to block the tube.

In other cases, the tube will be rejected every time for some reason which is not well defined. In other cases after a prolonged stay in the larynx, the tube cannot be removed without danger of asphyxia, either from spasm or tracheal contraction. In these cases tracheotomy should be done.

In conclusion we desire to say: Intubation is (without any doubt) the method of choice in operation for croup, but it should not be done when the case cannot be under the direct and immediate care of a physician accustomed to the operation.

In default of these conditions tracheotomy should be preferred.

THE CAUSATION OF CHLOROFORM SYNCOPE.*

BY LEONARD HILL, M.B.,

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INTRODUCTION.

THE whole endeavor of this paper is directed towards the establishment of the true pathological cause of chloroform syncope, and the controversion of one of the most pernicious and dangerous doctrines ever put before the medical profession. This doctrine, so long received by many with credence, is that chloroform kills by paralysing the respiratory centre. Supported by the wealth of the Hyderabad Government, furthered by the prejudiced enthusiasm of Surgeon-Lieutenant-Colonel Lawrie, this statement, upheld by a series of experiments, many so careless in execution that they could not for one moment be accepted by a trained physiologist—this doctrine that the paralysis of the respiratory centre causes chloroform syncope, has been industriously spread abroad, and instilled into the minds of the whole medical world.

Chloroform syncope is a subject on which every medical man must have more or less clinical experience. It is one, therefore, that naturally each feels qualified to discuss or to write about in the medical journals. What is wanted at their hands is a careful record of the symptoms observed in chloroform syncope, rather than an addition to the mass of literature dealing with the theory of the subject.

Chloroform is a drug used by the young anæsthetist with the utmost hardness, and until he has the misfortune in his practice to meet with a death caused by it, he derides the danger of the drug, and asserts that its safety merely depends on the care and skill of the administrator. After losing his patient he falls to descanting upon the unavoidable dangers of the drug, dangers which he is now the first to maintain cannot be met by any degree of skill in admin-

* An address delivered before the Society of Anæsthetists, London, February 18th, 1897, on the results of an experimental inquiry carried out by Leonard Hill, with the assistance of Harold Bernard, M.Sc., F.R.C.S., and C. Wall, B.A., of the London Hospital.

istration. In a certain institution in Great Britain, in the course of a recent year, there were out of some three or four thousand administrations no fewer than twelve fatalities. This is no exceptional case. The deaths from chloroform are not recorded in the medical journals, for these reflect upon the reputation of the administrator and the institution in which they occur. In America, on the other hand, so convinced are the medical men of the danger of the drug, that I understand from a distinguished American surgeon, Dr. Keen, that the use of chloroform as an anæsthetic is practically abolished there. In my discussion of the subject I shall confine myself purely to the experimental side of the question. It must, in the first case, be admitted that results of experiments upon animals are directly applicable to man. The point to consider is whether these experiments are done by competent and trained inquirers.

APPLICATION OF EXPERIMENTAL OBSERVATIONS TO MAN.

My scientific experience in every direction leads me to give an absolute denial to the too common teaching of theorists and declamations of clinicians that the results of experimental inquiry on animals are inapplicable to man. It is simply a confession of ignorance on the part of the clinician, who, knowing so little of experimental physiology to enable him to elucidate the clinical problem before him, upholds this cry. An example of how such error may arise is to be found on examining the effect of respiration on sphygmographic curves. On forced expiration occurring, the sphygmographic curve of the radial artery of man rises; on the other hand, in an animal the arterial pressure falls. For years this has been pointed to as exhibiting a distinct contradiction in the results obtained from men and animals; but agreement will be brought about on every point the moment the fact is grasped that the radial artery is accompanied by *venæ comites*, and that the *venæ comites* swell owing to the obstruction of the venous flow. This obstruction itself is due to the rise of intrathoracic pressure.

It is by the swelling of the *venæ comites* that the pad of the sphygmograph is elevated, and not by the rise of tension in the radial artery. This fact has lately been proved by a research carried out by Dr. Sequeira, Mr. Barnard, and myself, a research which demonstrates that the venous pressure can never be neglected in the reading of sphygmographic curves or in diagnosis of the condition of the pulse by means of the finger.¹ Out of the enormous mass of literature that deals with the question of chloroform, very few papers can be found based on true experimental inquiry. I shall briefly

summarize the results contained in these papers which have definitely added to our knowledge of this subject.

FALL OF ARTERIAL PRESSURE PRODUCED BY CHLOROFORM.

Before the rise of the graphic method Snow recorded a series of valuable observations made by direct inspection of animals who were submitted to the influence of chloroform vapor.² He found that when the animal inhaled air containing 3 to 6 per cent. vapor of chloroform, the respiration ceased while the heart sounds remained distinctly audible. When the quantity of vapor inhaled reached 8 to 10 per cent. the heart became extremely feeble, and the heart sounds might even disappear before the respiration ceased. So soon as the graphic method of recording the blood pressure was introduced, it became established by the Glasgow Committee and others that the arterial pressure falls during the administration of chloroform.

This fact is determined beyond all criticism. No one has ever introduced any evidence to the contrary. According to the Hyderabad Commission, as the fall of arterial pressure continues the animal first becomes insensible, then the respiration gradually ceases, and, lastly, the heart stops beating. What is the reason of this fall of arterial pressure which always occurs when a large dose of chloroform is given? The Commission ventured to give no opinion, but concluded:

"From all their experiments that the effects of chloroform are first exerted upon the nervous tissues. The vasomotor centre is very soon involved, the respiratory centre becomes paralyzed, and then the muscular tissue becomes affected, and last of all the heart."

This is the statement that requires to be strenuously denied. One of the most valuable contributions which testify against this creed has been contributed by MacWilliam.³ This author opened the thorax, established artificial respiration, and either directly observed or recorded the extent of dilatation of the cavities of the heart. He found that when chloroform vapor was administered in an amount under 4 per cent., the heart exhibited pronounced dilatation by the time that the conjunctival reflex was abolished. Evidence of dilatation was obtained when chloroform was given in the ordinary amounts that are required to produce anæsthesia, and at a time when the arterial pressure had not fallen to any marked extent. When the dilatation became extreme the heart failed in its function as a central organ of the circulation. Though it continued to rhythmically contract, its action was feeble and entirely ineffective, and its cavities remained engorged with blood.

The dilatation occurred to the same extent after division of both vagi. Since the dilatation is not sudden in origin, and the organ, in spite of its functional inefficiency, beats rhythmically, it is clear that the method employed by the Hyderabad Commission of observing the movements of the heart by passing needles through the thorax into the cardiac muscle may lead to the most deceptive conclusions. The heart continues to contract and to agitate the needles, while its power of maintaining the circulation has completely vanished.

According to MacWilliam the fall of arterial pressure is in its earlier stages due mainly to the depressing effect of the anæsthetic on the vasomotor centre. The stage of depression is often preceded by a period of slight stimulation. The later stages are associated with failure of the heart as well as of the vasomotor centre. MacWilliam's experimental evidence for the failure of the vasomotor centre is as follows: "During the earlier stages of the fall of arterial pressure he produced a considerable rise of arterial pressure by firmly compressing the abdomen. If the heart was still but little affected by the poison the tension rose—as in the classical experiments of Stephen Hales—because by this compression the input into the right heart from the abdominal veins was increased, and the output from the abdominal aorta diminished. In a later stage, when the heart was poisoned, abdominal compression failed to produce any rise of arterial tension.

PARALYTIC DILATATION OF THE HEART.

In several animals MacWilliam observed sudden failure of the heart during the primary anæsthetization, while the respiration continued unaffected. On rapidly opening the thorax of these animals he found the heart to be in a state of paralytic dilatation. He managed to revive the circulation by rhythmically compressing the heart. In some cases this did not prove successful, as the heart remained paralyzed. The Commission confess that:

"It is impossible to say whether, after chloroform has been pushed and then discontinued, the respiration will be restored spontaneously or not, and it is never in any case certain that artificial respiration will restore the natural respiration and blood pressure, no matter how soon it commenced after the respiration stops. A great deal depends upon the after-fall (of arterial pressure); in some cases even after the respiration has been restored the pressure continues to fall and respiration again ceases, and artificial respiration then fails."

This exactly describes the results obtained by MacWilliam. In

these cases, according to this writer, where artificial respiration failed the heart had passed too far into a state of paralytic dilatation. The direct action of chloroform on the frog heart has been illustrated by a beautiful series of researches carried out by Sydney Ringer. The results of his experiments have become a subject of ordinary demonstration to my physiological students. In Ringer's tracings⁴ is shown the comparative effect of ether and chloroform on the frog heart. In the first tracing Ringer showed the paralysis of the heart due to the addition of $1\frac{1}{5}$ c.cm. of chloroform to the nutritive fluid which circulated through that organ. The heart passed into a condition of paralytic dilatation. The second tracing demonstrates that 50 c.cm. of pure ether are required to arrest the heart. In no case did ether produce dilatation of the organ. This is supported by the fact that MacWilliam also obtained no evidence of dilatation during the inhalation of ether.

The whole frog heart can be immersed in pure chloroform and yet not immediately die. This is naturally so, because the concentrated drug, by killing and coagulating the protoplasm on the outside of the heart, forms a layer which protects the heart from the further action of the drug. Thus the crude experiment of pouring chloroform into the pericardium of the mammal led to a negative result in the hands of the Commission. To have a rapid effect the chloroform must be diluted and circulated through the coronary arteries, for thus it reaches every single muscle cell in the organ.

RESPIRATORY AND CARDIAC FAILURE.

The experiments of Gaskell and Shore⁵ are of the greatest interest and importance. On injection of chloroform into the cerebral arteries, the drug carried directly towards the brain first excited and then paralyzed the bulbar centres. Respiration became spasmodic and then stopped, the arterial pressure rose and finally fell, the heart was slowed and finally accelerated. In the hands of Cash and Dunstan amyl nitrite produced the same sequence of effects; amyl nitrite is the most powerful of dilators when introduced into the general circulation. These results are exactly similar to those produced by acute anæmia of the spinal bulb. After ligature of both carotids and both subclavian arteries, the sequence of symptoms follows the same course. But a fact unnoticed by Gaskell and Shore, but observed by me in many of my experiments on cerebral anæmia, is this. In certain animals, especially in those in a condition of shock, paralysis and not excitation of the vasomotor centre occurs immediately on the establishment of the anæmia as on the

injection of chloroform. In these cases the fall of arterial pressure is the primary and the failure of respiration the secondary symptom.⁶ In contrast to the effects obtained from injection of chloroform into the cerebral arteries, it was found by Gaskell and Shore that similar injections of the drug into the jugular vein in very small quantities produces a fall of arterial pressure, and diminution of the excursion of the pulse and of the respiratory undulations. The respiration frequently ceased after the heart beats had become no longer visible. This observation I confirm in every particular. I have constantly used this method to kill animals with the greatest rapidity at the end of experiments. The Hyderabad Commission failed to obtain this effect, although they injected 20 c.cm. of pure chloroform into the jugular vein in successive doses. The cause of this failure is to be found in the ignorance of precise physiological methods which was unfortunately betrayed throughout much of the work of the Commission. In Gaskell and Shore's experiments chloroform freely diluted was injected into the intact jugular vein, through which the blood was freely circulating. By the Commission, on the other hand, it was pure chloroform that was injected into the jugular vein after ligation of that vein above the seat of injection. In the one case the drug was carried directly to the heart, in the latter it remained in the vein. By Hare and Thornton⁷ this experiment has been made more than a hundred times, and the heart has in all cases rapidly failed. These authors found that

"Injection into the jugular veins of more than 2 to 4 c.cm. of chloroform caused arrest of inspiration, rapidly followed by cardiac arrest, which was not secondary to the respiratory failure but to a primary action of chloroform upon the heart muscle."

In regard to these experiments it must be remembered that the use of a needle by the Commission as an indicator of cardiac action is entirely fallacious. After injection into the jugular vein Hare and Thornton record that the heart is so widely dilated as to fill the pericardium almost to the point of bursting, and the cavities (particularly the ventricles) are engorged with blood. Although they may still be feebly contracting, the contraction is abortive, and fails to cause arterial flow. "Chloroform," they write, "is capable of causing death of the cardiac muscle whenever it comes in contact with it, and that there is no possibility of this arrest being due to vagal irritation is proved by experiments in which vagal section preceded the use of chloroform."

The most brilliant part of Gaskell and Shore's work is the contrivance of their cross-circulation experiments. They take two dogs,

"the fed and the feeder." In the fed dog the carotid and the subclavian arteries are ligatured. One or more of these vessels are then connected by rubber tubes to one or more of the same arteries of the feeder. The jugular veins of the two animals are also put in connection. The blood of the feeder is rendered incoagulable by the injection of peptone or leech extract. By this means the circulation through the brain of the fed dog is maintained by the blood propelled from the heart of the feeder. The circulation through the rest of the body of the fed dog remains in its normal condition. If chloroform be now inhaled by the fed dog the drug circulates through the heart and the blood vessels of the lungs, abdomen, and the limbs of the dog. Its brain is supplied by the uncontaminated blood of the feeder. Under these conditions the heart of the fed dog passes into paralytic dilatation, while its respiratory movements are maintained unimpaired by the respiratory centre in the spinal bulb. If, on the other hand, the feeder be made to inhale chloroform, while the fed is given none whatever, the arterial pressure in the feeder will then fall, and the bulbar centres in the fed dog are first excited and then paralyzed by the drug derived from the feeder which circulates through them. In this case the arterial pressure of the fed dog rises while its respiration is paralyzed. By these ingenious experiments, which were several times repeated, these authors conclude that the heart is rapidly paralyzed by chloroform, that the respiratory centre is paralyzed, while the vasomotor is not only not paralyzed but rather excited to increased action. "There is no evidence," they write, "that direct vascular dilatation, owing to the presence of chloroform in the blood, plays any great part in the fall of blood pressure." This last statement is refuted by my experiments. An interesting fact which they notice, and one which has been frequently confirmed by myself in my researches on cerebral anæmia, is that the respiratory centre is much more easily affected by chloroform when its blood supply is to a large extent diminished.

In reference to the cross-section experiments, the objection has been raised that the blood supply to the spinal bulb is not entirely cut off by a ligation of the carotid and subclavian arteries. This objection carries no weight. It is perfectly true that by way of the anterior spinal artery a certain amount of blood does reach the spinal bulb. This does not to the slightest degree invalidate the main results of the research. On giving chloroform to the fed animal, the circulation is rapidly paralyzed, while the respiratory centre is maintained in full activity by the blood of the feeder. This is the one fact of importance, proved without any possibility of controver-

sion, that while the respiration remains in full force the circulatory mechanism poisoned by chloroform fails in a very short space of time to maintain its efficiency. If some of the blood of the fed animal did reach the spinal bulb, so much the worse for the respiratory centre, but we see that in spite of such contamination the respiration continued to act in an efficient manner. If the Hyderabad Commission failed to obtain these results on repetition of this experiment, which is one contrived by Shore, and Gaskell, who, to quote Lawrie himself, is "one of the two greatest physiologists in the world," the failure is only a further proof of the incompetence of the experimenters employed by the Commission.

SUMMARY OF PREVIOUS INQUIRIES.

From this review of past researches we can build up the following statement :

(1) Paralysis and dilatation of the heart resultant on the administration of chloroform is affirmed by MacWilliam, Ringer, Hare, and Thornton, Gaskell, and Shore.

(2) Paralysis of the vasomotor centre as a further result is affirmed by MacWilliam, Hare, and Thornton, and denied by Gaskell and Shore.

(3) Paralysis of the respiratory centre as another result is admitted by every experimenter.

(4) The Hyderabad Commission maintain that death is due to the failure of respiration, that cardiac failure is secondary and is a matter of no importance, as it never occurs during ordinary anæsthetization with chloroform. This is denied by MacWilliam and by Gaskell and Shore, who maintain that cardiac failure is the primary cause of death. To these may be added the opinion of Lauder Brunton—a compromise—that the weakening of the respiration causes an insufficient aeration of the blood, which in its turn gives rise to heart failure through the combined action of asphyxia and chloroform.

NEW EXPERIMENTAL OBSERVATIONS.

I shall now turn to my own experimental work in relation to chloroform. This research forms one of a series of researches which for the last few years I have been carrying out on the influence of gravity on the circulation.

If a dog be affixed to a board which can be swung round a horizontal axis, and cannulæ be inserted down the jugular vein and carotid artery and connected with manometers, and if the intravascular openings of these cannulæ be placed in the axis of rotation,

then the following points can be recorded.⁸ (The animal, during the period of observation, is, it must be noted, narcotized with morphine.)

(1) On dropping the animal into the vertical feet-down posture the arterial pressure falls to a slight extent, and then rises again almost to the normal level. A typical experiment may be demonstrated by the following figures :

The arterial pressure in the horizontal position equalled 140 mm. Hg.; in the vertical feet-down position it fell to 120 mm. Hg., and then rose to 130 mm. Hg. The pressure in the superior vena cava fell about 8 mm. Hg., and remained at that level so long as the animal was in the vertical position. Both pressures were immediately restored directly the animal was returned to the horizontal position.

That the hydrostatic effect of gravity exerts no greater result depends on the integrity of both the vasomotor centre and the respiratory pump. This is shown by the results obtained in the following typical experiment :

The splanchnic nerves are divided through lumbar incisions. After this lesion is performed the arterial pressure in the horizontal position equalled 94 mm. Hg., while in the feet-down position it fell to 44 mm. On compression of the abdomen the pressure rose to 106 mm. On withdrawing the compression it fell again to 40 mm. On dividing the abdominal wall by a crucial incision the pressure fell to 16 mm. Finally, on rapidly opening the pleural cavity, the pressure fell to zero, and the circulation ceased, to be restored once more to 44 mm. by the resumption of the horizontal position.

By this experiment it was proved that the hydrostatic effect of gravity becomes of vital importance when the vasomotor tone of the splanchnic area is destroyed. When, in addition, the respiratory pump is thrown out of gear, the circulation in the feet-down position becomes impossible. In this wise is the circulation aided by the respiratory pump. We have seen that abdominal compression with the hand restores the arterial pressure to normal. The input from the veins into the right heart is increased, the outflow from the arteries into the abdominal capillaries is diminished. By powerful expiratory movements of the abdominal muscle the animal accomplishes the same manœuvre. At the same time by inspiratory movements of the thorax the blood is sucked as well as compressed into the right heart. This typical form of respiration is always manifest when the splanchnic vasomotor tone is abolished,

and the animal placed in the vertical feet-down position. The compensatory mechanisms can be abolished by one stroke of the knife, dividing the spinal cord at the level of the first dorsal vertebra. On dropping the animal then into the vertical feet-down position the arterial pressure falls to the zero line. By violent contractions of the diaphragm, excited by the anæmia of the bulbar centres, the heart may be sufficiently filled to produce, for a brief period of time, a series of effectual beats, and then once and for all the circulation fails. In one experiment the arterial pressure after division of the cord, done whilst the animal was in the horizontal posture, equalled 80 mm. Hg. The pressure fell to zero at once when the animal was dropped into the feet-down posture. By violent diaphragmatic respirations the arterial pressure was raised to 6 mm. The respiratory centre soon became paralyzed, and the circulation ceased. The empty heart, however, continued to beat vainly, and on returning the animal two minutes later to the horizontal position the heart was filled, the circulation renewed, and the arterial tension raised to its former level. This manœuvre is one which can be repeated several times. The animal can, as it were, be slain and brought to life again at will. If the thorax be opened the heart can be seen to fill or empty as the animal is turned into the horizontal or feet-down position. Now I know of no agent which can so rapidly abolish the compensatory mechanism for gravity as chloroform.

“To take an example : During ordinary anæsthetization with this drug the arterial pressure in the horizontal position equalled 92 mm. Hg., and in the feet-down position 17 mm. Hg. Compressing of the abdomen with a bandage caused the pressure to be maintained at 80 mm. Hg. On removal of the compression the pressure immediately fell again to 17 mm. Hg. Therefore during morphine narcosis the hydrostatic effect of gravity may produce a fall of pressure equal to only 10 mm. Hg., while during chloroform anæsthetization the fall may be as great as 75 mm. Hg.”

That the blood stagnates in the abdomen when the compensation for gravity is abolished is shown by the effect of abdominal compression. It is also shown by the fact that if, while the animal is in the feet-down position the vena cava inferior be clipped, no rise of pressure will take place on raising the animal into the horizontal position until the clip is removed. In the horizontal position compression of the abdomen will produce a rise of only about 16 mm. Hg. ; in the vertical feet-up position the rise will be of about 3 mm. Hg. ; while in the feet-down position there will be a rise of about 65 mm. Hg.

The effect of pushing chloroform is shown in the following type of experiment :

"In the horizontal position during morphine narcosis the pressure equalled 186 mm. Hg. ; in the feet-down position it represented 174 mm. Hg. On then pushing chloroform the pressure rapidly fell to 30 mm. Hg. At this point the respiration ceased. On returning the animal to the horizontal position the pressure rose to 56 mm. Hg., and the respiration immediately started again."

This experiment, typical of many which I have performed, shows that the paralysis of the respiratory centre depends not only on the chloroform which is circulating through and poisoning the centre, but also on the height of the blood pressure. By lowering the tension the circulation through the centre becomes inefficient and the respiration fails. By raising the tension the circulation through the centre is once more rendered efficient and the respiration is renewed. The depth of anæsthesia likewise depends on the depth of the fall of blood pressure.

Now, on examining the tracings of the Hyderabad Commission, I find an absolute agreement between their results and my own. In their curves the arterial pressure is seen, when the chloroform is pushed, to fall rapidly and greatly ; the respiration stops when the pressure has reached a level not far removed from the zero line. When the chloroform inhaler is then withdrawn and the arterial pressure slowly rises from the excitation of the asphyxial blood, respiration starts once more. In their tracings and in my tracings respiration can be seen to cease at a certain pressure, and to start again when the tension once more rises to nearly that same pressure.

Although the tracings are so much alike, the interpretations are widely different. The Hyderabad Commission, engaged on a wild goose chase to prove that respiration ceases before the heart fails, find in their tracings the proof that the failure of respiration is the primary cause of death. I, on the other hand, maintain that not only my own tracings, but theirs, too, conclusively prove that the failure of circulation is the primary cause of the failure of the respiratory centre.

I do not wish to deny for one minute that chloroform damages the respiratory centre and weakens the respirations, but the point that I insist upon is that the respirations would not cease at the moment when they do cease were not the centre damaged by the concomitant fall of arterial tension. The contrast between the effects of ether and chloroform on the compensatory mechanism for

the hydrostatic effect of gravity is most marked. If the subject be in the horizontal position, and the chloroform pushed, rapid fall of arterial tension will follow, and if in the feet-down position the fall becomes precipitous. In the feet-down position the fall becomes indeed so precipitous that the curve rapidly approaches the zero line, and the respiration then ceases. On the other hand, on pushing ether, the fall of tension is far more gradual, and on dropping the animal into the feet-down position the tension does not fall to anything like the extent that it would do after administering chloroform, and the respirations do not cease. Thus in two contrast experiments, on using ether in the first case the pressure fell from 125 mm. to 100 mm. during a period in which, on using chloroform, in the second case the pressure fell from 162 mm. Hg. to 30 mm. Hg. On pushing the chloroform, respiration stopped when the tension equalled 30 mm. Hg., while it was perfectly efficient at that tension on pushing ether. With both drugs the fall of pressure and the damage of compensatory mechanism are the same in character, but in the case of ether the onset is far less intense than it is in the case of chloroform. On turning the animal into a horizontal position, or on compressing the abdomen, the contrast between the result of the two drugs is very striking. In the case of ether the heart is undamaged, and the arterial tension is restored by either means to normal. In the case of chloroform the heart is damaged, and the pressure is not only not restored to normal, but in some cases, on the application of compression, it falls to zero owing to paralytic dilatation of the heart. A normal heart cannot possibly, by means of compressing the abdomen, be thrown into paralytic dilatation, while in the case of a heart poisoned by chloroform, this accident is one which not infrequently may occur.

The Hyderabad Commission carried out a few experiments on the effect of the alteration of the position during chloroform narcosis. The workers paid no attention to the fact of the absolute necessity of placing the arterial cannula in the axis round which the animal is turned. Their experiments were thus vitiated by the hydrostatic effect of gravity on the column of fluid in the tube which connected the cannula with the manometer. By the neglect of such a simple precaution the experiments on this point were rendered entirely worthless. During the course of a prolonged experiment I have always found that the compensatory effect for gravity becomes less and less, until finally in the feet-down position it is too inefficient to maintain the circulation. This increasing vasomotor paralysis I take to be the sign of the approach of what is commonly

known as a condition of shock. During this condition of shock inhalation of chloroform is the last straw to abolish the compensatory mechanism. The Commission attempted to instantaneously produce shock by such operations as drawing teeth, crushing testicles, or evulsing nails. In animals such operations, owing to excitation of the sensory nerves, merely induce a rise of blood pressure. A condition of shock is never by such means brought about in animals rapidly, but only in the course of an hour or so. In applying the conclusions drawn from these experiments and extended to man the Commission neglected the state of emotional fear which in human beings frequently precedes anæsthetization, which may by temporarily establishing vasomotor paralysis produce syncope. During emotional fear, if the patient be in the erect posture, the face will blanch, the heart empty, beat rapidly and feebly, and the blood pass into the abdomen. If, then, the horizontal position be taken up, and the abdomen compressed, the circulation is renewed and the syncope abolished. If chloroform be administered to a man sitting in a dentist's chair in a state of acute fear, it is easy to see how the drug may produce a fatal condition of syncope. The vasomotor mechanism is, owing to the state of fear, partly inhibited; the blood under the influence of gravity is stagnating in the abdomen, the heart is ill-filled, and the bulbar centres are anæmic. On inhalation of chloroform partial paralysis of the vasomotor mechanism may pass into total paralysis, and while the anæmic heart may pass into paralytic dilatation the anæmic respiratory centre will cease to act.

CARDIAC INHIBITION.

It is stated by the Hyderabad Commission that inhalation of chloroform has no effect on the length of the period in which the heart can be maintained in arrest by electrical excitation of the vagus. To this statement I must give a direct denial. On arrest of the heart in the morphinized dog these conditions arise: The arterial tension falls to zero, the pressure in the superior vena cava rises, and the respiratory centre is excited, as is the case in asphyxia, to the discharge of forcible expiratory spasms. By means of these spasms the venous pressure is greatly raised, and while the right heart is filled from the veins and compressed, the left heart is filled with blood from the compressed lungs. By such means the heart is rapidly excited to escape; if the respiratory spasms are prevented by making a section of the spinal cord at the level of the first dorsal vertebra, the period of inhibition is then enormously prolonged. In the same way, inhalation of chloroform prolongs the period of

inhibition, the blood pressure is lowered, the respiratory centre is weakened, the spasms on arrest of the heart do not occur, and escape does not readily take place. I have by means of chloroform very greatly prolonged the period of inhibition. In all such comparative experiments on the effect of excitation, it is absolutely necessary to stimulate the vagus with clip electrodes, so arranged that the nerve cannot shift from off the wires, and so constructed that the current is insulated and protected from short circuiting through the surrounding tissues. The Hyderabad Commission stimulated the vagus in the crudest fashion with electrodes held in the hands of an experimenter. During the first stage of pushing chloroform in a strong animal free from shock the bulbar centres are frequently excited by sensory stimulation of the nerve endings of the vagus in the respiratory tract. It follows that the respiration becomes spasmodic, the animal struggles, the heart is slowed by vagus inhibition, the arterial pressure first rises and then falls. It is suggested by the Commission that vagal inhibition is a safeguard, for it prevents by decreasing the velocity of flow, the chloroform being swept away in dangerous doses from the lungs by the circulation. The Commission denies that vagal inhibition can ever bring about death. I agree that the amount of cardiac inhibition excited by pushing chloroform is of no importance, and never entails syncope. At the same time, I have been able to kill animals by repeated and prolonged vagal arrest of the heart. The respiratory centre in these cases fails to act, since it becomes paralyzed by the anæmia of the bulbar centres. The heart is not killed by vagal inhibition but by asphyxia. In one experiment the spinal cord was divided at the level of the first dorsal vertebra, the heart was arrested by vagal excitation for five minutes, and the respiration entirely ceased. Finally the heart escaped, but the respiratory centre failed to recover. If in such a case artificial respiration be supplied the circulation recovers, the tension rises, and respiration starts once more. Such complete vagal arrest of the heart is never induced by chloroform, and therefore these experiments are of no clinical interest.

FATAL SYNCOPE IN AN EARLY STAGE.

In one year, out of 41 recorded deaths from chloroform syncope, 39 occurred during the primary stage of anæsthetization and before the surgeon had touched the patient. In those cases where syncope occurs during the course of a prolonged anæsthetization the patient can in nearly every instance be recovered by artificial

respiration. It is where syncope arises during primary anæsthetization that the danger of death is far greater.

In dogs this holds equally true. In my experience fatal syncope is usually met with during the primary anæsthetization. The method of administering chloroform to animals is at the start a crude performance compared to the method applied in the case of man ; and thus chloroform syncope is a phenomenon which can be very frequently studied by an experimentalist. My own experience of this primary syncope has been very great, in fact I have made a point of endeavoring to obtain the results which may give me the opportunity of studying the syncope and the methods of recovery. What is the difference between syncope in primary anæsthetization and that which occurs during prolonged anæsthetization ? Clinically this is the one question of vital importance. On this question the Hyderabad Commission throws no light whatever. The Commission writes :

“ In all cases of accidental death the usual chloroformist was absent, and no one was attending to the chloroform. The notes would have been more complete if some one could have watched the condition of the animal and noted the gradual but unheeded cessation of respiration without calling attention to it. As it is one has to be content with the remark that the breathing was noticed to have stopped at some particular time, but there is nothing to throw any light upon the condition during the important period that immediately preceded this discovery. A similar hiatus appears in the account of accidental deaths in the human subject, and is unavoidable. These cases are probably identical with the instances referred to by Snow, in which animals died in a sudden, and what was thought unaccountable, manner whilst chloroform was given to prevent the pain and struggles which would be occasioned by physiological experiments. There is no evidence whatever that death in a single one of them was due to paralysis or certain stoppage of the heart, as Snow assumes to have been the case.”

In this statement it seems to me the Commission gives away their whole case. They never observed these accidental deaths ; they left the primary anæsthetization to the hands of somebody who was not the usual chloroformist, and may have been the laboratory servant. In all cases of chloroform syncope occurring during primary anæsthetization I have carefully observed the symptoms. Either the pulse ceases before the respiration or the two cease together. By artificial respiration, and especially by rhythmic compression, first of the abdomen and then of the heart, I have some-

times maintained normal respiratory movements for three, five, or even ten minutes, while the circulatory mechanism has remained in a state of hopeless paralysis. On rapidly opening the thoracic cavity I have always found the heart to be as MacWilliam describes—in a state of paralytic dilatation. The cardiac musculature of the heart may rhythmically twitch, but entirely fails to empty its cavities. In these cases of primary syncope, and similarly in man, the course of events is almost always found to be as follows: Concentrated vapor of chloroform is applied to the respiratory orifice, the nerve endings of the sensory fibres of the vagus in the respiratory tract are powerfully excited. The animal struggles, the glottis is closed, and by the violent contraction of the muscles the intrathoracic pressure is raised. The animal performs the typical Valsalva experiment, and holds in its breath as long as it can. The effect of raising intrathoracic pressure is to diminish the output from the right heart, congest the venous system, and lower the arterial tension; the lungs are also compressed, and, to a large extent, are emptied of blood. Blood supply to the coronary arteries is diminished; this is due to the fall of arterial tension. The oxygen in the blood is decreased owing to the prolonged holding of the breath. By these means the nutrition of the heart is impaired.

Finally, on account of the excitation of the respiratory centre caused by the asphyxial blood, the animal is forced to take two or three deep inspirations. The lungs are immediately surcharged with chloroform vapor, and the blood reaches the coronary arteries carrying a dose of chloroform sufficient to throw the heart into paralytic dilatation.

SYNCOPE DURING PROLONGED ANÆSTHETIZATION.

The arterial tension is low and the respiration shallow. As a resultant of these conditions chloroform, however far pushed, never reaches the coronary arteries in an overwhelming dose. On the other hand, the arterial pressure falls to a further extent, the respiratory centre ceases to act, and the animal gradually and not suddenly enters into a state of syncope. In the one form of syncope artificial respiration frequently fails on account of the paralytic dilatation of the heart; in the other form, if the symptoms are noticed in time, artificial respiration is uniformly successful. It must, of course, be admitted that the form of syncope first described is not universally met with during primary anæsthetization. The syncope here again may be gradual in onset, and due to vasomotor and respiratory paralysis rather than to cardiac failure.

It has been suggested that chloroform produces dilatation of the right heart by causing pulmonary constriction, and so obstructing the blood flow through the lungs. There is no evidence of this. The lungs after death are found to be pale and empty of blood, not because of the vasomotor constriction of the pulmonary vessels, but in consequence of the animal dying with the thorax in the expiratory position. If the trachea be clamped at the height of a forcible expiration there may be only one-sixtieth of the weight of the whole blood of the body within the lungs. If, on the other hand, during a deep inspiration the trachea be clamped there may be as much as one-tenth of the whole blood within the lungs. It has taken the whole experimental acumen of such excellent workers as Bradford and Dean and Francois-Franck to demonstrate the existence of a pulmonary vasomotor mechanism at all, and while it has been proved to exist it has been found to be extremely feeble.

That the failure of the circulation is not secondary to the failure of the respiration, or brought about by asphyxia, is shown by the ensuing considerations. On pushing chloroform in an already anaesthetized animal the blood pressure can be lowered to zero, and the circulation will cease in a very short time after the respiration has ceased. In such a case we have no asphyxial rise of blood pressure, and no asphyxial convulsion on the part of the animal. Now in a curarized animal, in which no struggling occurs, on cessation of artificial respiration the heart continues to beat for a very long period. On re-establishing artificial respiration I have seen the heart recover even when more than fifteen to twenty minutes have elapsed after the cessation of the respiration, but in no case is it possible to recover an animal from chloroform poisoning after cessation of respiration, unless artificial respiration be established at the end of an interval of at most two or three minutes. If the heart be thrown into paralytic dilatation the artificial respiration must be applied far earlier than this. This is a proof conclusive that chloroform paralyzes the circulating mechanism far more rapidly than does asphyxia in a non-struggling animal. In a struggling animal during simple asphyxia the heart is of course far more rapidly paralyzed owing to the rapid diminution of oxygen in the blood and the impediment to the circulation, which is caused by the rise of intra-thoracic pressure during the violent expiratory spasms.

TREATMENT OF SYNCOPE.

From the previous experimental discussions in this paper, I believe it is conclusively proved that chloroform may paralyze the

heart, the vasomotor mechanism, and the respiratory centre. I will now say a few words as to the possible means of recovery from cardiac syncope. If it happened that we simply had to deal with failure of the respiration this would be no matter of grave danger to the patient. Artificial respiration will remove the danger. If simple vasomotor paralysis occur concomitantly with failure of respiration, as is always the case, artificial respiration combined with slight elevation of the abdomen to a level above that of the heart would immediately restore the patient to safety. It is when the clinician has to deal with the paralytic dilatation of the heart that the gravest danger has to be faced. As it is impossible to diagnose whether this condition may exist or not, every case of chloroform syncope should be treated as if it did exist. Recovery can be brought about, and, so far as my own experience goes, practically in almost all cases, by following this simple procedure. At the moment syncope occurs the patient must be placed in the horizontal position, and artificial respiration applied. The chest must be rhythmically compressed by placing the hands on each side of the thorax, so that the heart may share in the compression, and the circulation through that organ may by artificial means be maintained to a certain extent. If this is not quickly successful in restoring the pulse and natural breathing, the patient should be turned into the vertical feet-down position. By this simple means the dilated right heart will be emptied into the abdominal veins. Whilst this is taking place, artificial respiration must be maintained. I have frequently seen the paralyzed heart start beating again on thus emptying it of the blood. After a few seconds the patient should be returned to the horizontal position, and the right heart will thus be refilled with a fresh supply of venous blood. By means of the artificial respiration this blood is driven on through the lungs to the left heart, and thence into the coronary arteries. If this manœuvre does not prove successful at the first attempt, it must be repeated. Since I have adopted this method I have scarcely failed to recover a single case of chloroform syncope. The success enormously depends, of course, on the swiftness with which the condition of syncope is recognized. Nelaton's inversion, or the feet-up position, is only a safe measure in cases of syncope arising from vasomotor paralysis. Either inversion or compression of the abdomen are fatal mistakes in cases of cardiac failure. I have shown by a series of experiments that a poisoned heart is with the greatest ease thrown into paralytic dilatation by compressing the abdomen.

By rhythmically and artificially compressing the thorax or the

heart, I found it possible to maintain an arterial tension of 20 to 30 mm. Hg. This causes the coronary arteries to be flushed with fresh blood, and the heart to be excited to spontaneous contraction. After the circulation has thus been renewed, the respiration frequently remains in abeyance because the arterial tension is too low to excite the centre to activity. In this condition the best plan is to cease artificial respiration, and carefully observe the pulse. The arterial tension, on account of the asphyxia, will rise, and when it has reached a certain level, spontaneous respiration will start once more. If by any chance the pulse should show signs of again flagging artificial respiration must be immediately resumed for another period.

As to the danger of administering chloroform I entirely agree with the Hyderabad Commission that the inhaler should only be applied when the respiration is quiet, should be removed entirely if the patient show any sign of struggling. If this precaution be always taken deaths from chloroform would become far more rare; nevertheless, it must always be looked upon by the inexperienced as a most dangerous drug, and one the use of which should be avoided whenever ether can be appropriately substituted. Pure chloroform, I have found, kills in exactly the same way as impure chloroform. The A.C.E. mixture, on the other hand, is safer than pure chloroform, simply because the latter drug is diluted, and therefore is not given in a concentrated form. Chloroform is the predominant partner in the mixture, and when A.C.E. is pushed the animal dies with all the symptoms of chloroform syncope.

CONCLUSIONS.

(1) Chloroform produces a primary failure of the circulating mechanism and a secondary failure of the respiratory centre. The respiratory centre fails to act not only because it is damaged by the drug, but because of the anæmia of the spinal bulb produced by the fall of arterial tension. This is proved by the fact that the action of the respiratory centre can be renewed by raising the arterial tension. The depth of anæsthesia depends, as does the paralysis of the respiratory centre, on the primary fall of the arterial tension.

(2) Chloroform, more than any other known agent, rapidly abolishes the vascular mechanisms which compensate for the hydrostatic effect of gravity.

(3) Chloroform abolishes these mechanisms by paralyzing the splanchnic vasomotor tone, and by weakening the action of the respiratory pump. When these mechanisms are totally abolished the circulation is impossible if the subject be in the feet-down position.

(4) Chloroform also produces paralytic dilatation of the heart. It acts directly like amyl nitrite on the musculature of the whole vascular system.

(5) There are two forms of chloroform syncope: (a) During primary anæsthetization. The patient struggles, holds his breath, raises the intrathoracic pressure, congests his venous system, lowers his arterial tension, and finally takes deep inspirations and surcharges his lungs with chloroform. In the first stage the left heart becomes impoverished; in the second stage it is suddenly filled with blood. This is drawn from the lungs, and is full of chloroform. The chloroform passes into the coronary arteries, and the heart is thrown into paralytic dilatation. Respiration and the pulse either cease simultaneously, or the pulse before respiration. (b) During prolonged anæsthetization this arises from gradually giving chloroform to too great an extent. The arterial pressure falls lower and lower, and, secondarily, the respiration ceases because of the anæmia of the spinal bulb. The heart is not in this case paralyzed by chloroform, because the drug is taken in gradually by the shallow respirations, and distributed slowly by the feeble circulation.

(6) Artificial respiration and the assumption of the horizontal position, if applied in time, will always resuscitate a patient from the second form of syncope.

(7) Artificial respiration, established with the patient in the horizontal posture, is also the treatment indicated in the first form of syncope; the heart should be rhythmically compressed by squeezing the thorax. If this does not quickly renew the pulse, the patient should be put into the vertical feet-down posture. The dilated right heart is thereby completely and easily emptied of blood. Artificial respiration is maintained during this manœuvre, and the patient is brought once more into the horizontal posture. By rhythmic compression of the chest an efficient circulation is maintained through the coronary arteries; by first emptying and then filling the heart a fresh supply of blood is brought into that organ. If this does prove the successful on the first trial it can be repeated.

(8) Inversion, that is, placing the subject in the feet-up position or compression of the abdomen will increase the paralytic dilatation of the heart. In this kind of syncope both these forms of treatment are worse than useless.

(9) In the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished, and chloroform may easily be the last straw to completely paralyze the circulation.

(10) Vagus inhibition of the heart is of no importance as an agent in the production of chloroform syncope.

(11) Ether is in every respect a far safer anæsthetic than chloroform. According to Ringer's experiments on the heart, ether is fifty times less dangerous than chloroform.

(12) With the practical conclusion of the Hyderabad Commission that the chloroform inhaler should be removed during the struggling of the patient or when the respiration is of irregular depth, I am in absolute agreement, but I consider their interpretation of their own experiments and tracings concerning the origin of chloroform syncope to be mistaken.

Not only the work of all physiologists but also the tracings of the Commission, when rightly interpreted, prove that paralysis of the circulatory mechanism, and not of the respiratory centre, is to be dreaded by the anæsthetist.—*British Medical Journal*.

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- (1) See tracings and figures, *Journal of Physiology*, 1897. (2) *On Anæsthetics*, 1888. (3) *British Medical Journal*, 1890. (4) *Practitioner*, vol. xxvi., p. 436. (5) *British Medical Journal*, 1892. (6) For tracings see *The Physiology and Pathology of the Cerebral Circulation*, 1896, p. 128, *et seq.* (7) *Report to the Hyderabad Commission*, Davis, Detroit, 1893. (8) For further details and tracings see the *Journal of Physiology*, 1895-97.

Progress of Medicine.

MEDICINE

IN CHARGE OF

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PARAPNEUMONIC PLEURISY.

Lemoine (*Jour. de Méd.*, October 10, 1896) has made a series of observations on the various forms of pleurisy occurring in the course of pneumonia. He finds that besides the pleurisy which may follow in pneumonia, the so-called metapneumonic variety, there is another to which he has given the name "parapneumonic," which consists in an effusion concomitant with or immediately consecutive to the hepatisation. These latter are apparently quite different from the metapneumonic form, and instead of being so frequently purulent are more likely to remain serous, the fluid in point of fact being found not to contain any micro-organisms, and especially no pneumococci. It is probable, therefore, that it depends on these latter organisms, but that they are for some reason incapable of producing suppuration. Should a pleurisy with effusion appear some weeks after a pneumonia, it is extremely liable to be purulent, whether by a difference in the pneumococci or from the enfeebled condition of the patient. The parapneumonic form always follows closely or accompanies the pneumonia, and its physical signs are added to those of the other condition. Its course is very different. Sometimes the fluid has completely disappeared by the time the crisis has come; more often, however, the pneumonia has begun to resolve, although the fluid may be at its height, and it may happen

that the fluid is only discovered when looking for evidence of complete disappearance of the pneumonic exudation. The effusion may remain several days without increasing or diminishing, and may then, like the pneumonia, resolve. The two processes, pulmonary and pleural, seem to be independent, the disappearance of the one sometimes leaving the other unaffected. The author does not think prognosis is materially altered, the only difference being that convalescence is somewhat slow. He suggests thoracocentesis as the best therapeutic measure.—*British Medical Journal*.

JAUNDICE AND PERFORATION OF THE GALL-BLADDER IN TYPHOID FEVER.

Dr. Francis Hawkins (Reading).—The rarity of cases of jaundice with typhoid fever is mentioned by Sir Wm. Jenner, Murchison, Osler, Frerichs, Louis, Andral, and Liebermeister. The age varied in the cases on record between eighteen and fifty-four; as to sex, this complication is more frequent in males; as to time of appearance, it has been observed on the third, fifth, fourteenth, twenty-sixth, twenty-ninth, thirty-eighth day, and once during a relapse.

As causes have been mentioned: (1) a catarrhal process, and (2) parenchymatous liver changes, the liver being sometimes healthy, sometimes soft and containing nodules of pultaceous matter, sometimes presenting purulent tumours, and sometimes being acutely atrophied.

I bring before you a recent case of special interest, that of a female gipsy, eighteen years of age, suffering from typhoid fever, the abdomen being tumid and showing pink spots; the liver slightly enlarged, bowels irritable, pulse ninety-six and regular, respiration forty-four with rales, temperature 104° F., urine free from albumin, specific gravity 1030.

For the first five days there was constant pain in the back and legs, rejection of food, bowels frequently open, night delirium, formation of fresh spots, temperature 102° to 104.4°, respiration thirty-six; next day, severe pain in the right half of the epigastric region and over the right lower axillary and hypochondriac regions, respirations forty per minute with evidence of dry pleurisy over the right base, axillary and lower mammary regions, vomiting constant, temperature 105.8°.

On the following day the conjunctivæ and skin of the upper part of the body were jaundiced, bile was found in the urine, and the

stools were frothy and white. The next day the jaundice increased, the pain over the above-named regions was more severe, and extended around the umbilicus and the region of the gall-bladder was extremely tender. The day after, the jaundice was still marked, there was bile in the urine, which with fæces was passed unconsciously; respiration fifty per minute, breathing *mainly abdominal*, dry pleurisy on the left side and also on the right.

After this, the pain over the epigastric region decreased and ultimately disappeared; bile was vomited, and the jaundice persisted until death, having lasted from January 22nd to February 14th. Once, and for one day, with the exception of the conjunctivæ being yellow, it quite disappeared. Of pulmonary complications, there was, ten days before death, extreme dyspnœa, the face was cyanosed, the soft parts were drawn in, and respirations were fifty-six per minute, the breathing being abdominal, varying from sixty to eighty. The patient died from the pulmonary complications.

Post-mortem: The stomach was distended, there were adhesions of gall-bladder and stomach, the gall-bladder being adherent to the peritoneum, and around the adhesion was a small area of peritonitis; the anterior wall of the gall-bladder after adhesion was broken down, showing perforation. The contents of the gall-bladder were purulent; the walls were thin, especially on the posterior surface, where there was also almost perforation. The cystic duct was not blocked by the easily movable gall-stone. The liver was uniformly enlarged, showing cloudy swelling, but exuding no bile.

The gall-stone had not caused complete blocking of the choledochus, and, had it blocked the cystic duct, that in itself would not have produced jaundice, if the hepatic duct and choledochus were open. Purulent inflammation within the gall-bladder without destruction of the choledochus, according to Frænkel, may produce jaundice, and this condition existed. The typhoid fever may have been the exciting cause, and suppuration of the gall-bladder may occur during the attack, though perforation of the gall-bladder pathologically in typhoid is as rare as the occurrence, clinically, of jaundice with the same disease.

HEART PAIN.

Taking consecutively a hundred cases of coarse and decided forms of disease of the heart which have been under his own immediate care, the author has found that in just half the number there was no complaint whatever of pain in any part of the chest. Seven-

teen referred the pain generally to the front of the chest ; fifteen to the back (especially between the shoulders) ; twelve suffered pain at the epigastrium ; eleven suffered pains on the left side of the chest ; while two referred their suffering to the right side. Those who localized the pains to the exact area of the heart were but eight, and of these, two complained of it only after exertion. One described it as a sense of extreme soreness at the apex, while in another it partook of the character of neuralgia about the left breast. Only eight per cent. who complained of pain directly referred to the situation of the organ diseased.—*Dr. A. Ernest Sansom, in Med. Rec.*

In the London *Lancet* of October 17, 1896, there is reported by Dr. W. A. Ellison an extremely interesting case of acute ascending myelitis complicating measles. The patient was a boy of 14 ; the rash appeared on May 31, and he exhibited all the usual signs of a well-marked typical case of measles. The history of the case is as follows :

April 1. Vomiting and diarrhoea previously present subsided this day. Temperature fell below 104° ; had been above this previously.

April 2. Symptoms all declined ; evening temperature 99° .

April 3. Temperature was normal. This day the boy could not pass his urine, so a catheter had to be used. Dr. Ellison noticed that he bore catheterization with "extraordinary equanimity." After this he said he was fairly comfortable but had sort of "influenza pains" in his toes and legs. The patient spent a restless night, and on April 4, at 9.30 a.m., he was found to have complete paraplegia, with absolute anæsthesia from his toes up to his axilla, where there was very slight sensation. Thoracic movements much impaired, superficial reflexes about thorax and abdomen very slight ; reflexes of lower extremities entirely absent.

From this on the lad's condition became much worse. Temperature ran as high as 107° , and all control over bowels and bladder was lost ; respirations were now entirely abdominal and thirty-two to the minute. Coma now came on, and the patient died on the 5th. Temperature taken immediately after death was 109.2° .

[NOTE: This case occurred during an extensive epidemic of a very virulent type of measles. It is to be regretted that no post-mortem was held, so that we do not know what the gross or microscopic changes in the cord were. Amongst the complications or the sequelæ of measles paralyzes are rare. Hemiplegia is very rare,

and paraplegia only slightly more so. Barlow records a case (Medico-Chirurgical Society's Transactions, 1887) very similar to this one, which terminated fatally on the eleventh day.]—J.G.C.

THE RELATION OF TOXIC AGENTS TO THE PRODUCTION OF NERVOUS AND MENTAL DISEASES.

Dr. Ira Van Gieson discussed this subject at a meeting of the section of Neurology of the New York Academy of Medicine. The following is a digest of his remarks :

Our knowledge of the effects of toxic agents upon the nervous system is meagre, because they have not received the same study as the effects upon other organs. The laws of pathological processes are few, uniform, and unavoidable, and the brain does not escape them. The clinical results, however, are much more complex, because the functions of the nervous system are so varied and its anatomy so intricate. In spite of the multiplicity of names nervous symptoms are really due to but a few basic changes in the nervous-tissue similar to those seen in other organs of the body. In fact, most, if not nearly all, the diseases of the nervous system are dependent upon or secondary to diseases of the general body, which are in turn usually due to, or associated with, poisoning from intrinsic or extrinsic toxic agents, *e.g.*, bacteria and their poisons, auto-intoxication, alcohol, etc.

Many of the lesions in the kidney have analagous conditions in the nervous system. Thus acute parenchymatous nephritis which so often occurs in connection with infectious and contagious diseases has exactly its counterpart in the brain, and if the poisons producing the lesions are not too voluminous or intense the cerebral as well as the renal tissue returns to its normal state and the lesions disappear. Acute and chronic diffuse nephritis, in which both the stroma and the parenchyma are involved, has its analogue in the nervous system in some forms of general paresis. Sometimes the pia, if stripped off, carries with it some of the cortex, just as the capsule of the kidney carries with it part of the cortex of that organ ; and certain cases of epilepsy are due to chronic interstitial inflammation of the brain analagous with that of the kidney. The brain lesions are caused largely by the same things which produce the kidney lesions. The chief causes are poisons, especially the products of bacteria. The bacteria vary in virulence and kind and number. The resisting forces of the body also vary, and in such diseases as typhoid, with marked brain symptoms, we might either assume that the bacterial forces are powerful or the bodily forces weak.

Acute degeneration of the nervous system occurs in a great variety of acute infectious diseases, the eruptive fevers, sunstroke, auto-intoxication, cachexia from removal of the thyroid, eclampsia, alcohol and phosphorus poisoning, etc. All, if the poison was not too intense, acted in the same way, causing acute degeneration. The chromophyllic plaque, within the cell, disintegrated in greater or less degree, and the cell might even be destroyed. Thus in an autopsy after typhoid he had found nearly universal breaking up of the chromophyllic plaques, and yet the woman had only moderate delirium and cerebral symptoms, which tends to show that such an amount of change in the nerve cells is not uncommon in this disease and restoration might still be possible. The extent to which brain cells can recover after acute degeneration is no less remarkable than the similar recovery of kidney cells after acute degeneration of that organ. He thinks the freedom of the terminal circulation of the nervous tissue has much to do with its power to resist bacteria and poisons. The greater the intensity and amount of the poison the greater is the effort of nature to protect herself by throwing out an exudate, and this in multiple sclerosis results in patches of sclerotic tissue.

In the discussion, Dr. P. M. Wise, State Commissioner in Lunacy, said that there could be no doubt that a large proportion of the cases of insanity were of toxic origin. He thought disease of the kidneys was the source of the poisoning in a large number. He had noted in some cases of periodic insanity a relation between the attacks and the quantity and quality of urine, and had sometimes been able to abort a threatened outbreak of the symptoms by stimulating kidney elimination.

THERAPEUTICS

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CALCIUM CHLORIDE IN ITCHING.

Dr. Savill (in *British Medical Journal*), gives the drug in twenty grain doses in water after meals. He has seen no absolute failures, but it remains to be determined in what class of cases it is most useful. In long-standing cases it should be tried for some length of time.

PRURITUS VULVÆ.

Ruge (*Berliner klin. Wochensch.* 1896, 18,) frees the genitalia from hair, washes out the vaginal canal with sublimate solution so that no pathological material remains and then covers the diseased spots on the vulva with 3.5 per cent. carbol-vaseline. The procedure must be repeated every 3-4 days until a good result is secured.

EUCAINE.

J. S. Gibb (Philadelphia *Polyclinic*) has used eucaine in diseases of the throat and nose, and sums up the results of his experience as follows: (1) Eucaine is equally efficient with cocaine as an anæsthetic in ordinary examinations. (2) Eucaine possesses equal anæsthetic power with cocaine, and hence is as useful in operations in the nose, pharynx, or larynx. (3) Eucaine is nearly, if not quite, as effective as cocaine in reducing engorged turbinates. (4) Eucaine is superior to cocaine in that it is less likely to produce toxic symp-

toms. (5) Eucaïne is superior to cocaine in that it produces far less unpleasant subjective symptoms; especially is this true as regards the pharynx.

CARBOLIC ACID BURNS.

After finishing a post-mortem examination, I washed my hands thoroughly with soap and water under a tap. Part of the contents of an eighty-ounce bottle, labelled carbolic acid 1 in 20, was poured over both hands. The skin immediately turned white, intense burning and tingling commenced. Endeavored to wash off acid with water. A colleague recommended alcohol, of which a bottle was soon procured, and hands thoroughly washed with it. The burning and tingling almost immediately ceased. Some time afterwards five spots on the forearms, where the acid had dropped, were red and burning. Alcohol had then no effect. These were brushed over with saturated solutions of picric acid in water.

Results: Shedding of superficial layers of skin on hands; staining of five spots on forearms with picric acid.

Conclusions: (1) Bottle contained four ounces of fluid carbolic acid undiluted. (2) Alcohol is but immediate treatment for burns with carbolic acid because the acid is soluble 6 in 1 of alcohol. (3) Saturated solution of picric acid in water, in this, as in other superficial burns, is good treatment. G.S.

A CASE OF HÆMOPHILIA.

A boy sustained an injury to the head. In the region of the temple there was a wound about $\frac{3}{4}$ inch in length. During two days various attempts were made to stop the hæmorrhage, even tampons with Tr. Ferri. Mur. being used without effect. The boy was completely exhausted and feverish.

Dr. T. Bienwald took from a vein in the arm of a healthy woman with a hypodermic syringe about a drachm of fresh blood. This he injected into the bleeding wound. The foreign blood clotted in a short time, and the hæmorrhage was arrested after a light protective bandage was applied.

Bienwald thinks that the clotted foreign blood acted like an elastic tampon in all the interstices of the wound, or else that the foreign blood supplied the particular ferment for thrombosis of the vessels which is deficient in the blood in cases of hæmophilia.

(*Deutsch Med. Wochenschr.* Nr. 2, 1897.)

(*Central. für die gesammte. Therapie*, April, 1897.)

G.S.

OBSTETRICS

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THE NEW YORK MATERNITY HOSPITAL RECEIVES A PRINCELY GIFT.

We envy men of large wealth in one particular only, or chiefly, let us say, and that is in respect of their luxury of liberal giving to worthy causes. Such a luxury has Mr. J. Pierpont Morgan of New York, recently indulged in, in a gift of a ton of money, more or less, to suffering womankind. He purposes to denote \$1,000,000 for a new building, ten stories in height and fire-proof throughout, to the New York Lying-in Hospital. Wealthy women have given largely to churches and art, but it has been left to a man, already known for his generous gifts in other quarters, to seize the opportunity to qualify the parturient suffering of the poor. The following comment in the *New York Herald* explains gracefully and cunningly the concomitants of the generous gift :

“ Mr. Pierpont Morgan has done so many things with his right hand which his left hand knew nothing about that it gives us a peculiar pleasure to congratulate him on an act of beneficence concerning which he is compelled to take the public into his confidence. There are many men in New York who are not only princely in the extent of their fortunes, but equally princely in their gracious generosity. Among these Mr. Morgan occupies an enviable place. He has bestowed a large sum on a most worthy institution. There are in this city tens of thousands of women who while passing through the ordeal of child bearing are dependent on charity for nursing and medical attendance. The Lying-in Hospital has done what it could to alleviate their sufferings, but Mr. Morgan's beneficence increases its power for good at least one hundred fold. The condition on

which this gift is based—namely, a sufficient endowment to keep the institution in perfect running order—offers another opportunity to our citizens to assist a cause which makes a very pathetic appeal to the community.”

The influence of a physician, Dr. Thomas M. Markoe, is said to be back of it all. The annual income of the hospital is \$47,000, inclusive of \$12,000 that the city is in the habit of apportioning to it. It is stated that no donor during his lifetime has given an equal sum to a charitable institution. Five of the junior physicians on this hospital's staff have been travelling and investigating the home and foreign hospitals, their expenses having been defrayed by Mr. Morgan, and this has been going on in a quiet way, for fully two years. The new building as at present designed is to be a ten-story fire-proof structure of steel framework and a body of granite and light brick. It is to be ten stories high and capable of accommodating six thousand patients yearly, as against the present capacity of about 2,768. In the cellar floor will be the laundry, furnaces, dynamo rooms, a disinfecting room, and rooms for servants and attendants. The basement will contain a student's dormitory and sitting room, drug store, instruction room, and clinic and examination rooms. The kitchen and dining room for attendants will be on this floor.

IMPROVED METHOD OF VAGINAL IRRIGATION.

Prof. F. Ahlfeld believes that the infrequency of infection from post-partum vaginal injections is due to the fact that the fluids injected wash the germs present up into the cervix as they rebound from the posterior wall. To avoid this he uses a glass canula, closed at the end, but bored with rows of small openings sloping obliquely from the top downward, so that the liquid injected is always flowing evenly and gently out of the vagina. With this instrument and the usual antiseptic precautions, these injections have ceased to be followed by accidents in his practice.—*Gaz. Méd. de Liege*, December 31.

ETIOLOGY OF OPTHALMIA NEONATORUM.

Chartres contributes a long article to the December *Archives Clin. de Bordeaux* to call attention to a fact he proceeds to demonstrate, viz., that the serious ophthalmias are those produced by streptococci or by an association of streptococci and gonococci, or by these two and others. The gonococci alone are comparatively harmless and yield to treatment. The treatment should be prompt and powerful, consisting of copious irrigations with potassium per-

maganate, lime, boric acid and cauterization with nitrate of silver. This combination acts on all the various species of microbes which may be producing the ophthalmia. He concludes by insisting on the necessity of bacteriologic investigation.

THE HINDU LYING-IN CHAMBER.

According to the *Indian Medical Record*, the mortality in child-bed among Hindu women is notoriously high, a circumstance which is no doubt largely due to the very early age at which they usually become mothers. A still more potent cause, is, however, to be found in the shocking and apparently deliberate barbarity with which they are treated during the puerperium. The lying-in chamber of a Hindu family is ordinarily a little, damp, ill ventilated hut or room in some remote corner of the court yard or compound. In this the expectant mother is placed and there she remains from eleven to thirty-one days, during which, according to Brahminical law, she is looked upon as unclean. There is only one small inlet in this apartment, and the door is carefully closed to exclude those evil spirits, light and air. In order, probably, to purify the unfortunate woman by heat, wood fires are kept burning in the room both night and day. The smoke has to find its way to the outer air as best it can through any chinks there may happen to be in the roof or walls, which are usually made of bamboo with a thatching of mats or straw. With the view of more effectually exorcising the unclean spirit, a powder composed of peppercorns or ginger is given to the patient during the first few days; this preparation is administered either in the form of a paste or dissolved in boiling water as a tisane. It is not surprising to learn that the result of this elaborately perverse therapeutics is that something like 40 per cent. of the women subjected to it die of puerperal fever and tetanus within the first fortnight after delivery.

SURGERY

IN CHARGE OF

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AND

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SURGICAL TREATMENT OF SPASMODIC TORTICOLLIS BY KOCHER'S METHOD.

Quervain (*La Semaine Medicale*, 1896, No. 51), as the result of a statistical study, finds that operations on the spinal accessory nerve designed to cure spasmodic torticollis are mostly abortive. Among sixty-one collected cases, including ligature, stretching, avulsion, and resection, there were only twelve cures; twenty-two cases were improved. Kocher, discouraged by the results of seven operations on the accessory nerve, has adopted a method of his own since 1884. This consists of complete cross-section of all the involved muscles. The results are far better than those reported from any other method. In all, twelve cases were treated. Each of these had been subject to a thorough, prolonged, and persistent palliative treatment, including medicaments, massage, hydrotherapy, electricity, and orthopædic appliances. This cross-section of the muscles did not cause atrophy and paralysis, nor did it materially interfere with the mobility of the head. Of the twelve cases operated on, seven were definitely cured; the remaining five are still under a prolonged manipulative and gymnastic treatment which Kocher considers absolutely essential after his operation.

The somewhat naive explanation given as to the rationale of the cure is that the nerve-centre (irritation of which is undoubtedly the cause of torticollis in the great majority of cases), on sending out its impulse to the muscles, is so discouraged at the lack of result that it ceases to trouble in this way.—*Therapeutic Gazette*.

TREATMENT OF APPENDICITIS.

McBurney points out that there is no medical cure for appendicitis, even though some cases recover without operation ; and whilst he considers appendicitis a surgical disease, yet operation may not be necessary in every case. The true cause of this affection is probably a stoppage of the drainage from the appendix to the colon, and preliminary treatment is often worse than useless. The opium treatment relieves pain and discomfort, but entirely masks the symptoms at a most important time, for it is in the first twenty-four hours from the beginning of the attack that we can decide not only as to the diagnosis, but as to the probable course and result of the case. If in five or six hours there is no increase in urgency, the patient is not in immediate danger kept at perfect rest in bed ; if in twelve hours there is still no increase in the severity of the symptoms, the patient should soon begin to improve. On the other hand, if the urgency of the case has steadily increased in twelve hours from the time when the diagnosis was made, an operation will probably be called for. After two attacks a patient is sure to have a third, and each attack renders operation more difficult and dangerous. All the advantages lie with operation between the attacks. In an operation during an acute attack the prognosis is worse. In operating between the attacks it is rarely safe to do so in less than two weeks after an acute attack. McBurney was formerly more willing to operate during the attack than he is now. The chief cause of death is delay of one sort or another. In abscess cases the sooner we operate the better.—*Medical News*.

GENITO-URINARY AND RECTAL SURGERY

IN CHARGE OF

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THE EFFECTS OF BICYCLE RIDING ON THE PERINÆUM.

In the *Gazette hebdomadaire de médecine et de chirurgie* for December 6 there is a long and interesting article on this subject by M. E. Aldhuy, in which the author deals with the lesions of the perinæum produced by the bicycle saddle, the action on the urethra and on the *bas fond* of the bladder, the action on the external genital organs, and acute traumatism of the perinæum and their ætiology. He draws the following conclusions: (1) The injuries produced by the bicycle to the perinæum are of a grave and various nature. (2) Certain lesions of the perinæum have been observed, such as cutaneous erythema, abscesses, hæmatoma, etc., and finally, a more or less profound anæsthesia caused by repeated pressure. (3) There have been observed also certain functional troubles, such as the retention of urine often seen in men and undue frequency of urination in women. (4) The existence of urethritis from pressure of the saddle is not demonstrated, but it is certain that chronic inflammation of the canal and certain inflammatory complications, such as urinary abscesses, etc., may be produced or aroused by the bicycle. (5) Sometimes the venous arrest due to the compression of the perinæum provokes erection, although this is rare; more frequently, on the contrary, the continual perineal massage of the saddle produces temporary impotence. (6) With regard to genital excitation in women, it has certainly been much exaggerated. The bicycle has not the inconveniences of the sewing machine. (7) The majority of cases observed up to the present time have been due to a bad posture or to a defective saddle. (8) The real accidents to which bicyclists are exposed are traumatic in nature, and are produced by jolting over uneven roads, which throws the rider forward on to the end of the

saddle ; they are also caused by falling on the rear wheel or on the framework. These falls are not very serious ; sometimes a slight tear of the urethra may be observed, but they are cured rapidly without the least complication. In a very curious case, to which the author refers in the beginning of his paper, a fall on the wheel caused an enormous hæmatoma of the perinæum and of the scrotum. The bloody tumor increased, and the patient presented symptoms of internal hæmorrhage. M. Poncet, says the author, ascertained the integrity of the canal by means of a catheter. A very large incision was made in the centre of the mass, which enabled him to discover a tear of the transverse artery of the perinæum. The hæmorrhage was arrested with a ligature. (9) More frequently, however, the urethra is involved, and sometimes completely ruptured. In this case all the complications which follow rupture of the canal may be observed. (10) As the section of the urethra is here ordinarily very distinct, suture of the two ends may be followed by union by first intention. M. Poncet obtained very remarkable results in a case in which, seven years after a complete rupture of the perineal urethra, the patient did not show the least symptoms of stricture.—*N. Y. Medical Journal*.

NOTE.—We may add that seminal vesiculitis also follows in certain cases.

DANGER IN BICYCLE RIDING.

At the last meeting of the Berlin Medical Society Dr. Albu spoke on the dangers of bicycle racing. He said he had examined twelve bicycle racers on the ground at Halensee, near Berlin, both before and after races lasting from five to thirty minutes. In each case he found symptoms of acute dilatation of the heart after the race ; the pulse was enormously accelerated, the lips and face were more or less cyanotic, and there was considerable albuminuria. The dilatation of the heart, in some cases, lasted several hours, and Dr. Albu thinks that repeated training and participation in races might transform it into chronic dilatation. Of course he added that these dangerous symptoms only accompany excessive exertions on the bicycle, whereas moderate bicycle exercise was universally recognized as healthy. In the debate that followed Professor Virchow drew special attention to the position or "seat" of the bicyclist. He said there was no doubt that the prone position must affect the abdominal organs.

ARTIFICIAL TESTICLES.

The single and double castrations for hypertrophy of the prostate has again brought up the question of substitutes for the testicle from a cosmetic point of view.

Dr. Loumeau, writing in the *Annal de la Policl de Bord.*, Juli, 1896, advises the use of hollow, oxoid, rubber bodies as being elastic, not absorbable, and not too heavy. Catgut, silk, aluminum, glass, and other substances have been tried. Catgut is absorbed, metals and glass are too hard or too heavy.

He relates a case in which a double castration was done on a man sixty-five years of age, and the rubber balls stitched into the testicle sac.

They were well borne, and served their purpose well.

(*Centralblatt fur die gesammte. Therapie*, April, 1897.) G.S.

PÆDIATRICS

IN CHARGE OF

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AND

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NEW YORK ACADEMY OF MEDICINE—PÆDIATRIC SECTION.

Dr. J. L. Smith gave some diphtheria statistics from the New York Foundling Asylum for seven years ending December 1, 1896. In 1890 the percentage of deaths was 50 per cent. ; in 1891, 52 per cent. ; in 1892, 38 per cent. ; in 1893, 28 per cent. ; in 1894, 24 per cent. ; in 1895, 45 per cent. ; in 1896, after antitoxin treatment, 12 per cent. During the last five months of 1896 there had been 65 cases treated, with three deaths.

Dr. Winters claimed that the antitoxin question would never be settled by hospital statistics. Careful study and observation in private practice were needed. He quoted figures to make it appear that the present low rate of mortality is due, not to antitoxin, but to a milder type of disease, than has occurred for several years. He also gave figures which showed that equally good results had been experienced without antitoxin, and that several physicians had a high mortality percentage with antitoxin, although in the majority of cases it had been injected on the first or second day. Loeffler had treated seventy-one consecutive cases with his solution without a death. He stated that the files of the London *Lancet* would show that an average higher weekly rate of mortality had occurred in England since the antitoxin treatment than the average during the past ten years. At the Willard Parker Hospital in August, 1896, the mortality was 37 per cent., and in November, 25 per cent. despite antitoxin. This, he thought due to the character of the epidemic at the time.

He then dealt with the question of dosage, stating that the quantity injected had increased from 1,500 to 6,000 units, and that following this the death rate had run up to 60 per cent.

He then detailed some unfortunate experiences of physicians in private practice. Dr. Dorning had lost seven consecutive cases with antitoxin. Dr. Dallas had lost ten out of eleven. He mentioned two cases in which a tonic spasm had followed the injection. Both children died in this condition. The daughter of a physician had received a dose of antitoxin and convulsions with cyanosis promptly followed. On recovery it was ascertained that diphtheria was not present at all. All the world had heard of the death of Prof. Langerhan's child. He reported three cases in the practice of other physicians in which convulsions and cyanosis occurred after antitoxin. One of the children died.

He claimed that the use of antitoxin was gradually lessening, and in proof cited the fact that at one time the New York Board of Health had fifty horses on hand, last year they had eight, and this year only four.

Dr. Winters was followed by a number of other physicians, the majority of whom were opposed to him, and refuted many of his arguments.

EDUCATIONAL USES OF HYPNOTISM.

Dr. R. Osgood Mason, (*Pædiatrics*, February, 1897) gives particulars of seven cases.

Case 1—A school girl, 15 years old, intelligent and a great reader of books that interested her, but who had no aptitude for school work. She was always at the foot of her class, and always being plucked, owing to self-consciousness and timidity. Six times she was hypnotized, and while in that condition suggestion was made to her that if she would concentrate her mind on her studies, she would lose that excessive self-consciousness and timidity. She immediately began to improve and two months after treatment passed an examination with 79 per cent. of the marks. The improvement was maintained.

Case 2—An intelligent woman, 35 years old, although a good reader, could not spell without a dictionary. She was also a sleep walker. Suggestion during hypnotism cured the somnambulism. Suggestion was also made as follows: "You can read. The correct form of each word you wish to write is already in your mind. When you are in doubt, you will not think how the word is spelled. You will become passive and at once an impression of the correct spelling will come to you and you will write it correctly without hesitation." Immediate improvement followed three treatments.

Case 3—A seven year old boy, cowardly in all his actions, was made a strong, brave boy by hypnotic suggestion.

Case 4—A five year old girl was cured of night terrors.

Case 5—A boy of sixteen was cured of self-abuse and cigarette smoking.

Case 6—A man was cured of morbid sexual ideas and practices of the homo-sexual type.

THE BACILLUS OF FRIEDLANDER IN PHARYNGITIS AND TONSILLITIS.

In a communication to the *British Medical Journal*, March 20, 1897, W. C. Pakes, assistant demonstrator of bacteriology at Guy's Hospital first directs attention to the published account of investigations by Nicolle and Hébert concerning the occurrence of Friedlander's pneumo-bacillus in the throats of persons suffering from pharyngitis and tonsillitis, and afterwards describes his own investigations on the same subject, carried on at Guy's. Nicolle and Hébert inoculated 1,600 tubes from the throats of patients seen by them and found the pneumococcus six times. Since November, 1894, 500 tubes have been examined, inoculated from patients from the out-patients and wards at Guy's. In five cases Pakes found the bacillus of Friedlander; twice in pure culture, twice in association with the Klebs-Loeffler bacillus and once with the staphylococcus aureus.

Cases 1 and 2 were both children. There were small yellowish plugs on both tonsils, which were spreading towards one another. Klebs-Loeffler bacilli were found in conjunction with the bacillus of Friedlander. The children were sent to a fever hospital and were lost sight of.

Case 3—A man aged 30, complained of a sore throat, which he had noticed for a few days. The fauces were red, and the tonsils red and swollen: there was a slight colorless exudation on both sides of the fauces. There was no constitutional disturbance, and the patient said that he felt perfectly well except for the sore throat. The cultivation on coagulated blood serum was a pure one of Friedlander's bacillus. On the following day the throat had the same appearance, and the second cultivation again proved to be a pure one of the same bacillus.

Case 4—A man, aged 20, complained of a sore throat which he had noticed for about a week. The fauces were red and injected, and there were two or three whitish plugs over the crypts of the tonsils, but no sign of membrane. The culture on blood serum was

found to consist of the bacillus of Friedlander and staphylococcus aureus. Two days later the throat was still inflamed, but less sore. A second cultivation revealed the presence of the same two organisms.

Case 5—A girl, aged 6, was brought to the hospital because she had a sore throat. The tonsils were red and swollen, and a few plugs of whitish material were present. The temperature was 100° F. A pure cultivation of Friedlander's bacillus was found on the blood serum. No further observation was made.

THROMBOSIS OF THE VEINS OF GALEN AFTER SCARLET FEVER.

In a report to the Clinical Society of London (*British Medical Journal*, March 20, 1897), Dr. E. W. Goodall described a case of scarlet fever in which death was due to spontaneous thrombosis of the veins of Galen. The patient, a girl aged eight years, had a moderately severe attack of fever. On the evening of the eleventh day, when apparently convalescent, she was seized with a succession of general convulsions, which after a few hours gave rise to more or less general rigidity and gradually deepening coma. There was pyrexia, the temperature rising shortly before death to 107.4° F. The pulse was very frequent. There was no optic neuritis, and the urine was free from albumen during the whole of the illness. At the necropsy ante-mortem clot was found in the veins of Galen and in the straight sinus. The clot was hardly, if at all, adherent. Both choroid plexuses were covered with a thick layer of recent lymph. The optic thalami were in a condition of red softening, the left being almost diffuent. Beyond slight ulceration of the tonsils there was no other lesion. There was no middle-ear disease. The case was brought forward on account of its rarity, as when spontaneous thrombosis occurred after a specific fever it was usually located in the heart or one of the vessels of the lower extremities.

TUBERCULOUS PERITONITIS TREATED BY OPERATION.

At the March meeting of the Northumberland and Durham Medical Society Dr. MacDonald exhibited three children who had been operated upon for tuberculous peritonitis. The fluid had been washed out, adhesions broken down, and the wounds sutured without drainage. All had made good recoveries.—*British Medical Journal*, March 27, 1897.

PSYCHIATRY AND NEUROLOGY

IN CHARGE OF

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A NEW METHOD OF LOCALIZING BRAIN LESIONS.

At a late meeting of the Royal Academy of Medicine in Ireland Mr. Robert Cox read a paper on "A New Method of Localizing Brain Lesions" and exhibited the necessary apparatus for its employment. He pointed out that there was need of a more perfect method of locating the important areas of the cerebral cortex on the overlying surface of the scalp, seeing that most, if not all, the methods generally employed are either limited in their scope or complicated in their application, while many give rise to error by the use of a standard measure, the inch or the centimetre, for varying surfaces. He thought the method he was about to describe would be found devoid of these objections. For its use two things were necessary: (a) an instrument which he had invented and called a cerebroglyphometer, and (b) a diagrammatic map of the hemisphere of the brain, prepared from readings made by the use of the same instrument on the cadaver and casts of the brain *in situ*. This map might be substituted, or augmented, by a list of indices made in the same way. The instrument consists entirely of the mechanical device technically known as "lazy tongs" formed into a circle, with two accessory loops attached to the circle by their ends in such a way that they arch over it at right angles to each other. One loop bears the numerals, beginning at each end with 1, and ending in the middle with 10; while the other loop has the letters A to V in consecutive order from before backward, that bearing T forming the junction with the circle behind. The map is made on gnomonic projection with the radii or longitudinal lines marked by letters, and the semicircles or lines of latitude by numerals. In using the instrument it is necessary to extend it in all parts, and apply it to the head with

the rivet forming the function of the lettered hoop with the circle in front on the glabella, and the rivet marked V at the other end to the occipital protuberance; then to press down the loops between these two points in the middle line, and close the circle round the head on such a plane that the numeral 10 will rest on the lettered band. The instrument is then in position, when, to find any given point—say, Broca's lobe—it is only necessary to consult the map or list of indices for the bearings thus given, as "C₄, left side," and place the 10 of the numbered loop on the C of the lettered loop, when the numeral 4 will lie over the part. Having thus shown the simplicity of the method, for the carrying out of which no recourse need be had to any science, and the almost automatic action of the cerebrogaphometer, he proceeded to explain its accuracy, showing that it was applicable to all-sized heads, and formed its own unit of measurement for each, thus eliminating the errors due to the use of a standard measure for a varying surface. The two fixed points taken, the glabella and occipital protuberance, place the circle on that plane considered so important by Professor Fraser as bearing a fixed relation to all important parts of the brain. His opportunities of testing its accuracy were very few, but in those it gave excellent results, while with regard to Rolando's fissure, perfection seemed to have been reached.

SENSORY DISTURBANCES IN LOCOMOTOR ATAXIA AND THEIR LOCATION.

Some years ago the subject of locomotor ataxia was thought to be practically exhausted, the symptomatology and pathology clear; the disease was labelled and put away upon the nosological shelf. More recently the question of its pathology has been awakened afresh and is not yet settled, and additions to our knowledge of its symptomatology are far from infrequent. Such an addition we may count the investigations of Laehr regarding the occurrence of anæsthesia upon the trunk. It is about two years since Hitzig called especial attention to this symptom, but the work of Laehr is the fullest and most systematic up to date, embracing as it does the careful, often-repeated examination of sixty cases of locomotor ataxia. In only five was there no anæsthesia of the trunk, and these five were all cases of locomotor ataxia complicating dementia paralytica, in which the spinal affection was secondary to and much less prominent than the cerebral affection. This trunk anæsthesia is usually not very marked, and relates particularly to the perception of touch

rather than pain, in contradistinction to the sensory disturbance of the lower extremities, which ordinarily first manifests itself as an analgesia, while sensation for touch is normal. Its location is generally at about the level of or just below the nipple, and takes the form of a band reaching from the spine to the middle line in front. It is nearly always bilateral, but the bands of the two sides may not be of the same width nor on the same level. Want of symmetry is generally due to the anæsthesia of one side extending lower, as the upper border seldom differs on the two sides. In the incipient stage the band is narrow, taking in one or two intercostal spaces and their borders, or the anæsthesia itself may not be constant. Indeed, in this stage there may be no distinct anæsthesia, but simply an inability to locate touches well, while the power of localization is often found in the area adjoining a distinctly anæsthetic surface. When the anæsthesia is very slight, a prolonged examination of touch and pain sensation may improve it, so that the anæsthetic area diminishes in size. One of the most interesting facts elicited by Laehr's investigations is that the areas of anæsthesia correspond closely, not to the peripheral nerve distribution, but to the spinal segments, as outlined by the work of Thorburn, Starr, Sherrington, Head, and others. The band about the trunk has a more horizontal position than the ribs, so that if it corresponds to a certain rib in front it falls one or two vertebræ below it behind. In some cases the author could watch the gradual extension upward of the anæsthetic zone. With great regularity, as soon as it reached the third intercostal space, it began to extend on to the arm, at first affecting only the inner surface below the axilla, and then gradually covering the whole inner border before it spread much toward the radial side. Eventually the whole arm may become anæsthetic, but always by this extension from the ulnar to the radial side. As already mentioned, this corresponds to the gradual upward invasion of spinal segments, and a similar progression downward on to the lower extremities could also sometimes be traced. But it is not to be forgotten that a peripheral neuritis, which is now known frequently to occur in locomotor ataxia, may entirely change this distribution of anæsthesia. Analgesia of the ulnar trunk—that is, absence of pain when it is pressed against the condyle—he finds to be much less frequent (sixteen in forty-three) than did Biernacki (fourteen in twenty), who first described it. (The editor has found it in fully fifty per cent. of his cases.) It is of interest, too, to note that the author found in a number of cases entirely distinct bands of anæsthesia corresponding to spinal segments separated by a considerable

interval, which would seem to show that the pathological processes of locomotor ataxia may begin at nearly the same time in different parts of the cord. Another interesting fact is that at the border of the anæsthetic zone the skin is often hyperæsthetic to pricking, pinching, and cold ; and not only this, but in this hyperæsthetic zone the cutaneous reflexes are particularly lively. Laehr thus easily accounts for the difference of opinion regarding the activity or absence of the superficial reflexes in locomotor ataxia. If the place we stimulate to elicit a superficial reflex (*e.g.*, the abdomen for the abdominal reflex, the inner surface of the thigh for the cremaster reflex) happens to be within the anæsthetic zone, the reflex will be diminished or lost ; if within the hyperæsthetic zone it will be exaggerated. The author considers the trunk anæsthesia to be a very early, but not the earliest, sensory disturbance, as some degree of analgesia of the lower extremities generally precedes it.—*Medicine.*

ORTHOPÆDIC SURGERY.

IN CHARGE OF

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At the recent meeting of the American Orthopædic Association, held in conjunction with the Congress of American Physicians and Surgeons, at Washington, D.C., many subjects of very great interest to the general practitioner were discussed, as will appear in the transactions of the society.

Dr. E. H. Bradford, of Boston, Mass., read a very able paper before the general meeting of Congress, on congenital dislocation of the hip, which showed very clearly the pathology of the affection, the present methods of treatment, and the hope for still further advance in the future.

Dr. Bradford said that it would appear that in a great many cases of congenital dislocation of the hip the acetabulum is not so rudimentary as is generally believed. In fact, in a great many cases the acetabular cavity is quite well developed. In nearly all cases, however, the cavity is filled with fibrous or cartilaginous tissue, and frequently one thickness of the capsule, having been drawn upward by the displaced head, is glued over the cavity.

In those cases in which the cavity is fairly formed, and the upper lip of the acetabulum still partially intact, it is possible to reduce the dislocation as in an old traumatic dislocation. The chief hindrances to reduction are (1) the shortness of all the adductors of the thigh; (2) the interposition of a fold of the elongated capsule between the head of the femur and the cavity of the acetabulum; (3) the fulness of the cavity with fibrous tissue.

The adductors may be stretched by putting patient in bed with leg widely abducted and then with weight attached to foot making traction in line of abducted limb. As much as fifteen or twenty pounds may be attached to the foot for purposes of extension. At the same time a band should be passed around the thigh near its head, and traction made downwards at nearly a right angle to the

abducted limb. This tends to depress the head of the bone toward acetabulum. After a week or two of such traction it is often possible, under influence of an anæsthetic, by forcible traction, then flexing, abducting, and rotating outwards the thigh, to reduce the dislocation. The reduction will be accompanied by a more or less distinct chuck, such as occurs after reduction of a recent dislocation.

Now if patient is put up in plaster in this abducted and flexed position and kept from three to four weeks, then brought down to straight line by slow degrees, and patient allowed to walk, a cure will often be effected.

The pressure of the head of the bone will cause absorption of tissue in the acetabulum, and gradually the cavity will become deepened, until it is sufficiently perfect to retain the head of the thigh in all positions of the leg.

Massage and light gymnastics should be continued for some time after plaster is removed, when cure will be complete and the walk almost, if not quite, perfect.

In those cases in which the acetabulum is rudimentary, there being only a small triangular depression with little or no upper rim, it will be found impossible to proceed as above mentioned, and then the only course to pursue is to operate after the plan laid down by Lorenz, of Vienna.

This consists in opening up the joint, and, with a specially constructed spoon, scooping out a new cavity, into which, by forcible traction, accompanied at times with division of the adductors, the head of the thigh may be reduced. A plaster dressing is then applied, and the case, after closure of the wound, treated as a non-operative case.

Dr. Bradford is of the opinion that, with a little more experience, and a still clearer knowledge of the pathology of the affection, congenital dislocations of the hip, which have hitherto resisted treatment, may be added to the triumphs of modern surgical art, and placed on the list of curable affections.

Dr. V. P. Gibney, of New York, in discussing the paper, said he could not take such a rosy-tinted view of the subject as did Dr. Bradford. He thought in all those cases where a reposition could be secured without operation we could hope for excellent results, but his experience with operative procedures had not been of the brightest. Two or three cases had developed an acute arthritis from the operation, two or three became septic, and two or three of his best cases died of intercurrent affections.

Dr. Harry M. Sherman, of San Francisco, also discussed the subject, giving an account of his personal work with Lorenz in Vienna. He was not fully decided as to final results in operative cases, but was convinced of one fact, and that was that it required a great deal of skill and experience to get good results, or results equal to those obtained by Lorenz and Zoffa.

Editorials.

THE TORONTO GENERAL HOSPITAL TRAINING SCHOOL FOR NURSES.

WE have been informed by Miss Snively, the superintendent of this training school, that an important addition is to be made to the institution in the shape of a diet kitchen, which will be under the charge of Miss Burnham, who has passed through a regular school for cookery, and received a diploma after passing the prescribed examination. As we have already informed our readers, the course for nurses, which formerly extended over two years, has lately been increased to three years. One of the additional subjects for the third year is "invalid cooking." It will be the duty of Miss Burnham to give the nurses practical instruction in this subject. She is not a nurse, but was formerly a successful school teacher; and, it is confidently expected, she will be thoroughly well qualified for her new duties. Dr. O'Reilly, the medical superintendent of the hospital, has had a kitchen well arranged and well equipped for the trial of the new scheme. Invalid cooking is an exceedingly important subject, and we are glad to see these new facilities provided for this admirable nursing school.

THE MEETING OF THE ONTARIO MEDICAL ASSOCIATION.

THE seventeenth annual meeting of the Ontario Medical Association will be held in the Educational Department of the Normal School, St. James' Square, Toronto, Wednesday and Thursday, June 2nd and 3rd, 1897. This society was organized in 1881, when the first meeting was held in Toronto under the presidency of the late Dr. Workman. Since that time it has grown in strength to such an extent that it is now the most vigorous medical society in Canada.

We are informed by the secretary, Dr. J. N. E. Brown, that the two important committees have completed their arrangements in a satisfactory way, and expect a very successful meeting. The committee on papers and business have received promises of over forty papers. Dr. Coventry, the president elect, showed commendable zeal in coming from Windsor to Toronto to attend the most important meeting of this committee. In addition to the ordinary papers read at the regular sessions in the Normal School there will be a series of short clinics given in the General Hospital.

The Committee of Arrangement have decided that the visiting members shall be entertained at luncheon, after which they will be taken for a short cruise on the lake. This entertainment will be similar in character to those given in recent years. The yacht trip, which must necessarily be a short one, will probably be much enjoyed if the weather be favorable.

We hope there will be a large attendance. At the same time we have no desire to injure the meetings of the Canadian and British Medical Associations which are to be held in Montreal. To the thousand members of our Ontario association we would advise as follows: Make your arrangements to attend the *big* meeting in Montreal, and give a hearty welcome to our friends in Great Britain who will cross the ocean to meet the members of our profession in Canada; also, try to come to our meeting in Toronto. We want them to keep the Montreal meeting first in view. We desire Ontario to show a hearty appreciation of what our brethren in Montreal are doing to make the important meeting a decided success. We also want our province to recognize the efforts of our able and genial president, Dr. Coventry, and his committees to make the Toronto meeting a pleasant and profitable one; and, in consequence of such recognition, to attend in large numbers.

DANGERS OF CHLOROFORM.

THE occurrence of several lamentable deaths from chloroform in this province within the past year emphasizes the need for widespread publication of the selected article in this issue. We have long held with Sansom that the main conclusion of the Hyderabad Commission was a dangerous dogma. It is not unlikely that following the teaching of this authority many administrators have allowed cases of cardiac depression and dilatation to proceed beyond the point of recovery when a closer observation of the circulatory system would have obviated such calamities.

The errors of the Commission appear to be not in the tracings but in the reading of the "infallible records made by the animals themselves." Since the time of Clover, who himself "gradually discarded chloroform in favor of ether," we are glad to note that ether is becoming more and more the anæsthetic of election for general surgical purposes.

It is fifty times safer than chloroform, says Ringer. Wood tells us that syncopal death, which is common under the influence of chloroform, is rare under the influence of ether.

Such an authority as Mr. Jonathan Hutchinson writes (Archives of Surgery, Oct., 1889, on Safety of Ether): "I speak from a tolerably extensive observation both of my own facts and those of others when I say again what I have often said before, that I think that we ought to have a clear canon in full force on this most important subject. I have not the slightest misgivings in my belief that the restriction of chloroform would save many lives every year. The canon I would venture to suggest is this:

Never give chloroform alone in the first instance: let it be either preceded by ether or in mixture with it.

In view of the strong position taken by such clinicians and therapists, supported by the unanimous opinions of well-known and experienced anæsthetists as Braine-Bailey, Hewitt, Buxton, Turnbull, and the experiments of Gaskell and Shore, Hare and Thornton, Hill and MacWilliam, why should we not at once adopt what the best authorities have proved to be the safest anæsthetic, instead of groping about in a dangerous fashion for individual experience with chloroform?

Children are quite as susceptible to poisonous effects of chloroform as adults, infants take ether or some mixture containing it with greater safety and with less difficulty, when properly administered, than is commonly supposed. The aged also take ether well, provided the air-limitation be not too great in degree.

We are speaking, of course, of the great generality of cases, and are quite aware that some conditions of the patient and certain operations and battle-field necessities call for the use of chloroform.

KOCH'S NEW TUBERCULIN.

Koch's article in the *Deutsche Medicinische Wochenschrift* of April 1st has excited a great deal of interest. He begins by answering the objections to the possibility of acquiring immunity. Those who deny that immunity can be acquired point to the fact that even persons who have been cured are liable to renewed infection, and that patients may have tuberculosis for many years without acquiring any immunity. Koch explains this by saying that in chronic tuberculosis the conditions for the absorption of the bacilli and their products are unfavorable, the organisms being usually surrounded by dead tissue. In acute miliary tuberculosis the organisms are at first abundant, but later mostly disappear. This disappearance he attributes to an acquired immunity, which, in the acute form, comes too late to be of any benefit. He proposes to imitate the process which takes place in acute tuberculosis, and thus confer immunity without risking a fatal issue. He describes his experiments in this direction. Injections of dead baccilli failed because they led to abscess formation, and absorption was thus hindered. Intra-peritoneal injections gave some promising results, but led to adhesions, constrictions, and other pathological changes which often caused the death of the animals experimented upon. Chemical destruction of the bacilli altered their chemical constitution and destroyed their specific action. The glycerin extract which created such a sensation in 1890 was a great step forward, and was found to produce an immunity—but a toxin rather than a bacillary immunity in the majority of instances. He found this tuberculin of the greatest diagnostic value, even at a very early stage, in man as well as in animals, and has had no reason to alter his original views as to its value in this respect.

He then tried mechanical destruction of the bacilli, and his new tuberculin is the product of this method. The greatest difficulty was met with in getting rid of the protecting layer of sebatic acid. This was finally accomplished by triturating dried cultures in an agate mortar with an agate pestle. The bacilli were thus mechanically broken up—distilled water was added and the mixture separated in a centrifugal machine. The products were a whitish fluid free from bacilli, and a sediment composed of broken down bacilli and some organisms which had escaped destruction. This sediment was subjected to the same process again and again until every trace of the bacilli had disappeared and nothing remained but a series of clear fluids. The first of these fluids, the whitish opalescent one

referred to, he found to differ from those which followed, and a glycerine extract of it was practically identical with the old tuberculin of 1890 in that it caused a reaction but did not confer immunity. This he named the tuberculin O, or "T.O." The second fluid he called tuberculin R, or "T.R.," and it contains substances insoluble in glycerin, for, when glycerin is added to it a cloudiness is produced.

This second tuberculin, the "T.R." is the one he proposes as a remedy for tuberculosis, and he uses it in the same way as the old tuberculin, commencing with a very minute dose and gradually increasing. He commences with $\frac{1}{500}$ of a milligram, and if this produces a reaction still further reduces it. But if no elevation of temperature is produced he goes on injecting a gradually increasing dose every second day, until at the end of about three weeks he can inject twenty milligrams without any marked reaction. He insists that perfectly free and highly virulent cultures must be used in the preparation.

As to the results, he has experimented upon both guinea pigs and man; and, whilst his statement is cautious and conservative, he is none the less confident that "T.R." will prove of great value in suitable cases. He has obtained brilliant results both in lupus and pulmonary tuberculosis, but warns us that patients in an advanced stage will receive little or no benefit. Neither will it cure those with marked secondary infection, especially if with streptococcus. He found that patients whose temperature was over 38°C. were seldom benefited. But in suitable cases improvement was invariably the result. Indeed, many of the cases appear to be cured, but sufficient time has not elapsed to enable him to say that relapse may not occur. He looks upon the treatment as harmless, as with carefully graduated dosage neither reaction nor unpleasant results followed.

The following were the only symptoms observed in suitable cases of pulmonary tuberculosis: A slight increase in rales, then rapid decrease in amount of sputum to the vanishing point, and decline in temperature curve.

The preparation of the tuberculin is fraught with the greatest danger, and it is evident that elaborate precautions must be taken to prevent infection of those who triturate dry cultures of virulent bacilli. The work should only be done in establishments where all precautions are provided for. Experiments are now being carried on with a serum preparation obtained by the use of tuberculin, but he is not yet able to say whether it will prove effective.

No doubt the new preparation will soon receive extensive clinical testing, and the results will be awaited with great interest. If they justify the hopes which the distinguished investigator so confidently anticipates the practice of medicine will be revolutionized, and Koch will have gained a fame even greater than that of Jenner, Pasteur, and Lister. To show the possibilities of the new tuberculin some experiments with guinea pigs are of remarkable interest. When an animal is immunized by repeated injections gradually increased to the maximum it is found that large and repeated injections of most virulent tuberculous cultures may be administered with impunity, and the animal upon being killed shows no trace of tuberculosis or tubercle bacilli. Administered to guinea pigs affected with tuberculosis in the early stage a cure is brought about in from two to three weeks.

The new tuberculin will be placed on the market by a German house in the form of a glycerin solution containing a milligramme in each cubic centimetre. This solution is diluted with sterilized salt solution to obtain the minute initial dose ($\frac{1}{500}$ of a milligramme.)

Book Reviews.

The following books have been received :

NEW VOLUME OF HARE'S SYSTEM OF PRACTICAL THERAPEUTICS. *A System of Practical Therapeutics.* By eminent authors. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Volume IV. Octavo, 1100 pages, with illustrations. Regular price, cloth, \$6 ; leather, \$7 ; half Russia, \$8. Price of Volume IV. to subscribers to the *System*, cloth, \$5 ; leather, \$6 ; half Russia, \$7. Price of the *System* complete in four volumes of about 4,500 pages, with about 550 engravings, cloth, \$20 ; leather, \$24 ; half Russia, \$28. Lea Brothers & Co., Publishers, Philadelphia and New York.

THE DISORDERS OF DIGESTION IN INFANCY AND CHILDHOOD. By W. Soltan Fenwick, M.D., B.S., London, member of the Royal College of Physicians ; physician to out patients at the Evelina Hospital for Sick Children, etc., with illustrations. 377 pages. 8vo. Price, 10s. 6d. London : H. K. Lewis, 136 Gower Street, W.C.

THE JOURNAL OF CUTANEOUS AND GENITO-URINARY DISEASES has lately changed hands, the Physicians' Publishing Co. having purchased the Journal from William Wood & Co. Dr. J. A. Fordyce has retired from the editorial chair and is succeeded by Drs. James C. Johnston and George K. Swinburne.

THE DISEASES OF THE STOMACH. By Dr. C. A. Ewald, Extraordinary Professor of Medicine at the University of Berlin ; Director of the Augusta Hospital, etc., etc. Translated and edited with numerous additions from the third German edition by Morris Manges, A.M., M.D., Assistant Visiting Physician in Mount Sinai Hospital, Lecturer on General Medicine at the New York Polyclinic, etc. 600 pages. Profusely illustrated. Price— New York : D. Appleton & Company. Toronto : G. H. Morang, representing D. Appleton & Co., 63 Yonge street.

CLINICAL LESSONS ON NERVOUS DISEASES. By S. Weir Mitchell, M.D. LL.D., Edin., Member of the National Academy of Sciences Honorary Fellow of the Royal Medico-Chirurgical Society of London. Handsome 12mo., 299 pages, with illustrations and two colored plates. Cloth, \$2.50. Lea Brothers & Co., publishers, Philadelphia and New York, 1897.

Medical Items.

DR. C. W. CHAPIN has removed from Brantford to Canisville.

DR. F. C. BEDELL has removed from Hollier to Merrickville.

DR. W. J. WEAVER has located in Arthurette, N.B.

DR. HOLFORD WALKER, Isabella street, has gone to Manheim to investigate the Schoy method of treatment in heart disease.

THE A. L. HUMMEL ADVERTISING AGENCY have removed from 108 Fulton street to The Woodbridge Building, 100 William street, New York.

E. B. TREAT, medical publisher, has removed from 5 Cooper Union to 241-243, 23rd street, New York. Two sons, William and Edwin C., have been admitted to partnership and the firm will in future be known as E. B. Treat & Co.

The secretary has already received the following list of papers for the Ontario Medical Association, which meets on June 2 and 3:

Present Status of the Radical Cure in Hernia—G. A. Bingham, Toronto.

Serum Therapy in Medicine—J. L. Davison, Toronto.

Albuminuria of Pregnancy—R. W. Garrett, Kingston; G. Gordon, Toronto.

On the Clinical Value of Inflation of the Stomach—H. L. Elsner, Syracuse, N.Y.

Study of the Dried and Stained Preparation of the Blood—Harold C. Parsons, Toronto.

Treatment of Ulcers—Seneca D. Powell, New York.

Nervo-Motor Dyspepsia—H. J. Hamilton, Toronto.

Treatment of Eclampsia—W. J. Wilson, Toronto.

Traumatic Lesions of the Spinal Cord (with specimens)—G. A. Peters, Toronto.

Paper, Chronic Endometritis: Causes and Treatment—J. W. S. McCullough, Alliston.

Remarks on Modern Therapeutics—J. T. Fotheringham, Toronto.

Strepto-Mycosis—J. C. O. Hastings, Toronto.

A Case of Gangrene of the Rectum—L. Teskey, Toronto.

Two Unnamed Diseases—James Samson, Windsor.

The Injurious Effects of our Overwrought School System on the Health of Public and High School Pupils—R. Ferguson, London.

The Orthopædic Aspect of Nervous Diseases—H. P. H. Galloway, Toronto ; B. E. McKenzie, Toronto.

Cystic Tumors of the Ovary, Complicating Pregnancy, Labor, and the Puerperal state, with notes from cases—H. Meek, London.

"A Severe Case of Gonorrhœal Iridocyclitis"—G. H. Burnham, Toronto.

Some Considerations in the Management of Pregnancy—E. E. Harvey, Norwich.

Pain and some of its Aspects—D. Campbell Myers, Toronto.

Paper—Dr. Hanks, Blenheim.

The Cottage Sanitarium Treatment of Pulmonary Phthisis—N. A. Powell, Toronto.

Should the Medical Profession of Ontario be Self-Governed?—J. W. McLaughlin, Bowmanville.

Abscess of the Lung (Report of a case)—J. S. Hart, Toronto.

A Plea for Radical Operation for Hernia Among the Insane—A. T. Hobbs, London.

The Value of Aseptic Methods in the Treatment of Pus Cavities—A. Primrose, Toronto.

Tuberculosis of the Liver—R. W. Whiteman, Shakespeare.

Pneumococcus Infection—H. B. Anderson, Toronto.

The Treatment of Gastro-Intestinal Catarrh in Infants—H. D. Livingstone, Rockwood, Ont.

My Experience with Gall-Stones—J. F. W. Ross, Toronto.

Pathological Cord Specimens—Wm. Oldright, Toronto.

Experience with the Schott Treatment of Heart Disease—H. Walker, Toronto.

Symptoms and Diagnosis of Gall-Stones without Jaundice—J. E. Graham, Toronto.

BRITISH MEDICAL ASSOCIATION—MONTREAL MEETING, 1897.

Since our last issue the list of officers for the Montreal meeting of the British Medical Association has been completed. Dr. Herman M. Biggs, of New York, having accepted the invitation of the Council to deliver the address in Public Medicine. (Dr. Biggs, the scientific head of the New York City Health Department, physician to Bellevue Hospital, has done much to advance his subject. His address will be one of the features of the meeting.)

By an Order in Council, the Provincial Government has subscribed \$2,000 for the purposes of the association ; altogether, therefore, through the public spirit of the Dominion Government, Provincial Government, and Montreal City Council, \$10,000 has been granted towards the expenses of the meeting. This, with a guarantee fund which is being obtained from members of the profession in Montreal and with private acts of hospitality on the part of the citizens, should be ample.

Sir Donald Smith, the High Commissioner, has invited the members of the association and its guests to a reception at 1157 Dorchester Street upon the Wednesday evening of the meeting. Other leading citizens are offering afternoon entertainments. The Montreal Golf Club has also thrown open its links to members during the meeting, and in very many directions generous help is being offered by those unconnected with the profession.

All this activity in Montreal is, we are glad to learn, being met by a very promising condition of affairs upon the other side of the Atlantic. We learn that several steamship companies have already their best berths engaged by members, while some have already a full complement of prospective travellers. The invitations to the leading members of the profession in the United States have already been forwarded, and now the various sections are busy preparing their programmes.

We herewith print the provisional programme, corrected up to date, it being understood that this is provisional and liable to further modification :

PROVISIONAL PROGRAMME.

Wednesday, August 18 to Thursday, August 26.—Meeting of the British Association for the Advancement of Science at Toronto.

Thursday, August 26 to Monday, August 30.—Excursion for members and guests of the British Association from Toronto *via* Niagara, Kingston, the Thousand Islands, Ottawa, etc., to Montreal.

Monday, August 30.—Meeting of the Canadian Medical Association at Montreal.

Tuesday, August 31.—12 a.m., service in the English Cathedral. 2.30 p.m., Windsor Hall : Opening ceremonies and addresses of welcome. 3 p.m., address by the president-elect, T. G. Roddick, M.D., M.P. 4 p.m., garden parties, excursions, around the mountain, etc. 9 p.m., *soirée* at Laval University.

Wednesday, September 1.—10 a.m., McGill University : Opening of sections. 3 p.m., Windsor Hall : Address in Medicine, by Dr. Wm. Osler. 4 p.m., excursion down the St. Lawrence, etc. 9 p.m., reception by the Hon. Sir Donald A. Smith, K.C.M.G.

Thursday, September 2.—9.30 a.m., McGill University ; Sectional meetings. 1.30 p.m., lunch on the mountain. 3.30 p.m., Windsor Hall : Address in Surgery, by Mr. T. Mitchell Banks. 4.30, excursion across the island, etc. 7.45 p.m., annual dinner of the association, Windsor Hall.

Friday, September 3.—9.30 a.m., McGill University : Sectional meetings. 3 p.m., Windsor Hall : Address in Public Medicine, by Dr. Herman M. Biggs, and concluding general meeting. 4.15 p.m., excursion to St. Anne's and down the Lachine Rapids. 9 p.m., *soirée* at McGill University.

Saturday, September 4.—Excursions to Ottawa, Quebec, Kingston, Lake Memphremagog, etc.

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Original Communications.

THE PRESIDENT'S ADDRESS.*

BY JOHN W. COVENTRY,

WINDSOR.

IN meeting you to-day I am brought face to face with a difficulty which all men must feel when they occupy an office by courtesy and not by merit.

Were it not for the twice honored custom of presenting an address I would content myself with bidding you welcome, and wishing you Godspeed.

At a national gathering of this kind you have a right to expect at my hands a resume of the scientific discoveries of this year in all the branches of the profession, and perhaps a brief forecast of the advantages which these inventions and conceptions confer on mankind. Unfortunately my limited opportunities to speak from actual knowledge of these things, bars me from discoursing with

*Delivered at the meeting of the Ontario Medical Association, Toronto, June, 1897.

authority, and my reading has been too meagre to attempt a summary having any pretention to completeness.

You will therefore bear with me if I leave the scientific side of the subject to those who are themselves engaged in original research, and are following closely the avenues opened up by other explorers.

My remarks will be confined to the socioethical domain of medicine—a field which to-day presents enough of unassimilated material to fill a large sized book. While the evolution of time has brought about great changes in the scientific aspect of the profession, a practical and ethical change in its methods is also rapidly taking place.

Where is the family physician of the past? A quarter of a century ago he was as much a social as a professional factor in family life. To-day, except in the country, he exists more as a "holy memory" than as an active and trusted quantity. He may still be retained as an occasional family adviser, in a sort of an abstract way, but his laurels are already on the brow of his juvenile coadjutor—the hustling specialist. This may be for the public weal, or the public woe, but the fact remains that the old and trusted family physician is passing into oblivion, appearing occasionally on the horizon as a mirage reflected by a McLaren when he invokes the shades of Drumtochty. Have any of you considered the cause of this decadence? Is it for want of individuality in the man himself? Want of training? Want of application? Want of skill? Has the adoption of commercial standards, or mercenary methods, on the part of himself or his rivals anything to do with it?

Whatever the causes are, we find him to-day split up into specialities, and the average family has taken on a sort of centrifugal action with respect to their ailments. The Major Domo has had a long standing hæmorrhoidal affection, and a "Rectal Specialist" has him in hand. Madame, in the struggle of maternity, has received injuries which she thinks require the services of a Gynecologist.

The elder son has a pain in his back and is doing his own "doctoring." The patent medicine advertisement is getting its deadly work in on him, and his pocketbook—and his back still aches.

The elder sister has trouble with her eyes, and an alleged oculist is treating them.

Another scion has a "catarrh" so called. He is in the hands of a "Throat and Lung Institute."

Another daughter has a friend who has an unrevealed trouble

and goes twice a week to a doctor (?) who cures *all* his patients with electricity, and the young lady is easily persuaded to *try him* for—constipation.

A younger brother has an unseemly eruption and a “skin specialist,” after exhibiting the pictures and the pickles in his office, promises him a “skin like velvet,” but he will have to take medicine for six months.

But why multiply the evidence, the fact is known to every one of you that united families, so far as a common physician is concerned, is the exception nowadays.

I am not prepared to account for this state of things, but I may be pardoned if I suggest that some of us are largely responsible for it ourselves.

There is a trite saying “that too many men abandon the study of the profession when they begin the practice of it,” and in the busy life a doctor leads, when his rides are long and tiresome, when his sleep is broken up, when he is struggling to build up a practice, and can scarcely make ends meet, it is not to be wondered at if he does not keep abreast of the times with his reading, or, if he is not within reach of the city and its hospital clinics, he is very apt to drop into the rear rank.

A POST GRADUATE COURSE.

I am more than justified in making the suggestion that a few months spent in a post-graduate course every five years would be of incalculable benefit to him, and if Alma Mater, when, with benedictions and a diploma, sends forth her Neophyte to heal the sick, the appellation of “graduate” in its broad sense should be reserved, and the warrant to practise his profession, be made contingent on his return every five years, for revision, instruction, and further promotion.

A short practical course with this object in view could easily be devised and carried out by every Medical teaching body, and the result would be a boon to the profession, a benefit to the public, and the fractional tendency of the age would be greatly reduced.

One of the most easily belittling sins of the physician is to engage in some kind of supplementary occupation. It is natural enough that he does so, because the emoluments of a strictly professional career are not equal to the income of a successful commercial man.

The deflection may be elevating, or it may be debasing in its tendency. Literature and art have their votaries among the profes-

sion. Some are of an inventive turn of mind, and do not always confine their ingenuity to their own art. Joint stock companies generally have a representative physician on their directorates. Some develop a religious tendency, and spend a great deal of time with that and cognate subjects. Politics, however, is the great electric light which attracts the medical moth, and the ground around it is strewn with its victims.

It matters not whether it is the municipal moth, the legislative moth, or the federal moth, which the deluded doctor has in his bonnet, the effect on his scalp is all the same, for in ninety-nine cases out of a hundred he loses it.

To be successful in any of those ventures time and money must be given up freely, because the heaven-born statesman is just as much a *rara avis*, as the celestial advent of a doctor.

The moment he launches his bark on the political sea, that moment his thoughts diverge, and those who have felt the maelstrom of a political vortex, will tell you that the eddies of professional life are dead calms by comparison.

No matter what the fad may be, or what the motive is, just in proportion to the time and thought which is diverted from his professional studies will he fall behind in his standing as a physician, for it is a calling requiring a concentration of all his best faculties to keep up with the advance of modern thought and modern practice.

While these remarks might be more beneficial if directed to a class of students than to the matured savants, who largely compose my audience, yet the warning may not be too late to benefit some who have made the fatal mistake of listening to the Banshee's voice, but who can yet be made to see the error of their way, and can be induced to return to their first love.

I inscribe it in luminous letters on the wall that it is easier to serve God and Mammon than to engage in commerce and politics, and at the same time occupy the front rank as a physician or surgeon.

CONTRACT LODGE WORK.

Did time permit I would like to add my protest against the debasing practice of contract lodge work.

Vampire never bled its prey more mercilessly than the pseudo-benevolent societies have the lodge doctor. While wholly dependent on him for existence the lodge committees have dictated a ridiculous fee for his services, and the plastic physician, by his acceptance of it, has signed an acknowledgement that he has joined the

army of men who are doing business by giving "a quarter off," "tremendous bargains," "slaughter sale," or "cut rate tickets."

Nowhere is the medical profession "on the down grade" so much as in pandering to this influence, and left to their own impulses as they have been in the past, with no authoritative mandate on the subject, a certain class of physicians continue to transgress. The very worst feature of the whole affair is that they are nearly a unit in declaring against the practice, and believing it is subversive of the best interests of the profession, are willing to abandon it, but are deterred from doing so because some of their confreres are only watching the opportunity to slip into their shoes.

The following resolution was submitted to the Association of P. and S., Windsor, but is held in abeyance, pending some uniform action on the part of this association, or of the Medical Council, which will impair the standing and brand the transgressor as an unworthy member of the profession.

"Whereas this society has had under consideration for several months the question of lodge practice, and after considering it carefully, the following conclusion has been arrived at, viz. :

"That lodge practice, where an annual per capita contract is entered into for attendance on members, is subversive of the best interests of the medical profession and calculated to lower its dignity, as well as to deprive it of legitimate fees.

"Throughout the whole discussion on the subject no argument has been adduced to defend the practice, and inasmuch as all medical men in the city are financially victimized by it ;

"It is therefore resolved, that those whose names are undersigned agree, one with the other, to withdraw from lodge practice, and after their present contracts have expired we will not renew them under penalty of expulsion from this society."

Article VII. might be made to cover this point by the addition of a few sentences, and I would like to see a committee appointed before this meeting adjourns to deal with this and other subjects, the outgrowth of changed conditions, since the constitution was framed.

I wish in a few words to put myself on record as a volunteer in any well-considered movement which may be devised to protect the public against the incubus and modern octopus, "the proprietary chemical" manufacturer, *et hoc genus omne*. He has fastened himself on the profession, just as the quack advertisement has wound itself around the public.

The flood of literature poured into the doctor's office, calling attention to this and that "derivative" is appalling, and the prices charged are in many instances equal to the profit of highway robbery.

There are drugs in the market to-day, and reputable physicians are ordering them freely for their patients, on which the profits to the manufacturer are over 2,000 per cent.

Truly the doctor is much more wanton with his patient's purse, and a much more tolerant member of society than the average citizen.

Let a manufacturer of machinery, a railroad company, or one of the so-called combines, charge the public an exorbitant profit like this, and an outraged community would applaud the mob if it battered in the doors and windows of these establishments. All countries are interested alike in this matter. If we cannot reach the extortioners by professional restrictions, legislative measures can be adopted to tax the output at the point of manufacture, on a scale to be determined when the difference between its cost and selling price shall have been ascertained.

Before closing, I ask your undivided attention to a subject which is of paramount importance to the medical profession as individuals, to the profession as a local organization, to the profession as a national entity, and to its relations with other countries which have adopted a curriculum consistent with the scientific discoveries of the age.

A DOMINION STANDARD.

You are all aware of the anomalous condition of the medical profession in the Dominion, inasmuch as a graduate of one province cannot legally practice medicine in any of the others. Each province has closed its doors and erected itself into a close corporation. The individual doctor says, "This territory is mine. I have, at great expense of time and money, conformed to the high standard required by law, and I must be protected against the man who has been 'pitchforked' into the profession." And who is prepared to deny the force of this argument? But, on the other hand, who will deny that if we are to command the respect of our sister provinces, and of the profession outside of them, *we should be as one among ourselves.* The subject has been threshed out pretty thoroughly in the medical journals and by the Medical Council, but as far as I can see there is no earnest effort being put forth to solve the difficulty.

I think I am within the facts when I state that the standard of qualification is higher in Ontario than it is in any other province in Canada, or any State of the Union; and, while we feel justly proud of this eminent position, you have not failed to notice that it

amounts practically to an alienation of our confreres, who are more leniently dealt with in passing the rubicon.

To my mind, the chief cause for this condition of things is that a yeomanry, which has not its peer for intelligence on this continent, has placed educational and university matters in the hands of experienced and talented teachers, and the result is that these educators, keeping pace with advanced thoughts and methods elsewhere, insist on a standard for the Ontario student second to none in any part of the world, if you take the standard as a whole for comparison.

Other provinces are content with a less exacting standard, yet one in which they may be quite within the average gauge in other civilized countries.

Now, while I would not advocate a lower standard for our own university graduates, I would suggest the formation of a Dominion board—this may have been suggested before—whose duty it would be to adopt such a standard of examination as would admit properly authenticated graduates from all the provinces. I would also give it discretionary power to grant certificates to members of the profession, who had been years in practice, if they wished to change their residence from one province to another. The certificate would be conditional upon a good showing as to habit and repute, and, if thought necessary, a lenient oral examination.

This board would take the place of the present Provincial Examining Board, and in a few years the standard of the several provinces would be perfectly assimilated, the present bone of contention removed, and we would then be in a position to ask Great Britain and other countries to grant us registration, which we would reciprocate in kind.

I am not wedded to this or any other method to accomplish a union, but I am intensely impressed with the idea that if we are to be entrusted with the development and destinies of this new country, we must not add a medical barrier to the religious, racial, and other obstructions, having a tendency to prevent and postpone the unity of this country, and of placing its medical profession in the attitude which one scientific man should bear towards another. In dealing with this matter let us eliminate the animosities of the past, if there are any, and with a single eye to the prosperity of the profession, and the resultant advantage to the public, let us lay the foundation stone of the new structure in this Victorian year.

THE PRESENT STATUS OF SERUM THERAPY.*

By R. FERGUSON, M.A., M.D.,

Lecturer in Therapeutics, Western University, Medical College,
LONDON, ONT.

THE study of serum therapy is yet in its infancy. The success of the antitoxine treatment of diphtheria has given it a remarkable impetus within the last year or two.

IMMUNITY.

The nature of the power which so many infectious diseases have of conferring immunity from subsequent attacks is not yet understood. The character of the changes effected by a prophylactic agent in the system is likewise still undetermined. The variation in the period of acquired immunity ranging from a few weeks to years or a lifetime has so far received no satisfactory explanation. These are questions of profound interest, but medical science has not yet satisfactorily furnished their solution.

THEORIES OF IMMUNITY.

There are two leading theories on the subject of *natural* immunity, viz., (1) the cellular theory, and (2) the humoral theory. The cellular theory claims that natural immunity depends upon the seizure of invading micro-organisms by amœboid cells, and that these organisms are subsequently destroyed in the interior of the cells. This is the doctrine of phagocytosis as advanced by Metschnikoff, but it has not stood all the tests of experimental criticism. The humoral theory attributes immunity to the germicidal properties of the *serum* of the blood. This view is now accepted by the greater number of investigators of the present day. The last generation of observers was occupied chiefly with the study of cell life and manifestation, but within the last decade a great deal of study has been devoted to the body fluids, and especially the blood. Most careful investigation has been made of the changes wrought in the blood as the result of disease and of therapeutic agents. But, however great

* Read before the London Medical Association May 10th, 1897.

these changes may be, they are the direct and ultimate effects of cell activity, and on this account blood pathology and cellular pathology are inseparably connected. The humoral theorists concede that the germicidal property of serum is derived from the cells, and hence there has recently been a partial reconciliation between the cellular and humoral theories.

ACQUIRED IMMUNITY.

Apart from natural immunity there is an *acquired* immunity, the so-called antitoxic immunity, and it is with this form that serum therapy is chiefly concerned. Natural immunity probably depends upon some inherent property of the fluids or cells of the body. Acquired immunity, according to Behring, is due to some chemical alteration in the quality of the blood. Other investigators hold that the antitoxin acts primarily on the cells of the blood, imparting to them the power in turn of destroying the toxine in the blood. Armand Ruffer points out that the antitoxic effect is not of the nature of a chemical reaction, inasmuch as it is found that while one part of antitoxin neutralizes one part of toxin, yet ten parts of toxin require only two parts of antitoxin. Therefore, the reaction, whatever its character, is not of the nature of a simple chemical equation.

CURATIVE EFFECTS OF IMMUNIZED SERUM.

Blood serum is employed for curative purposes even more extensively than for its prophylactic effects. The difference between the prophylactic and curative effects is probably one of degree rather than of kind. To produce curative results, the antitoxic power of the serum must be augmented by successive injections of increasing amounts of the poisonous toxin into the animal undergoing immunization.

SEPTICÆMIA AND TOXÆMIA.

The action of a serum in combating a general septicæmia and a toxæmia arising from localized infection would appear to be quite distinct and different in character. Septicæmia is a condition in which there is a general distribution of the bacteria throughout the body, as well as at the point of inoculation, as *e.g.* in anthrax. In diphtheria, on the other hand, the blood, tissues, and organs generally are free from bacteria, and these organisms are found only at the seat of the membrane, but the toxins produced at the point of inoculation are absorbed and enter the circulation, thereby producing the condition of toxæmia, or poison in the blood. In both

septicæmia and toxæmia, however, death is produced by the poisonous products resulting from the growth of the infecting bacteria, whether the organisms are distributed throughout the body or remain localized. A serum may either be antitoxic or anti-bacterial, or both ; that is the antitoxic substance and the substance immunizing against the living bacilli seem to be distinct, and when the two properties co-exist in the same serum, it has been demonstrated experimentally that they are not formed simultaneously or to the same degree. In toxæmia a neutralizing antitoxine is employed, the active principle of which is possibly a ferment ; in septicæmia a serum is indicated which is not only antitoxic, but which is also immunized against living bacilli. Such a serum is obtained by injecting into the animal, whose blood is to be immunized, gradually increasing doses, not only of the toxin but also of the living bacilli, a serum which prevents fresh inoculation by the organisms, as well as neutralizes the toxin of the disease.

PRACTICAL APPLICATIONS OF SERUM THERAPY.

The disease which has yielded the most brilliant results to this method of treatment is unquestionably *diphtheria*. The triumphs of serum-therapy in this disease are so well authenticated and familiar that I shall not enter into the antitoxin treatment of diphtheria.

PUERPERAL SEPSIS AND ERYSIPELAS.

The close relationship of erysipelas and puerperal fever has been recognized by many authorities, and the impropriety of attending a case of confinement after handling erysipelas is now well understood. Both diseases are caused by the same micro-organism, viz., the streptococcus pyogenes, at all events the weight of evidence is in favor of the identity of the organism common to both. The names of Rogers and of Marmorek, of the Pasteur Institute, Paris, are most prominently identified with the discovery of anti-streptococcus serum, dating from February, 1895, and the serum in common use bears the name of the latter investigator. In forty cases of puerperal fever treated by this method, Marmorek reported 60 per cent. recoveries, and of forty-six cases of erysipelas all recovered. The diverse and less favorable results since obtained by other experimenters with this serum, may be due to various causes, e.g., imperfect technique, mixed infection, and possibly different varieties of the streptococcus being unequally sensitive to the serum. The anti-streptococcus serum is powerless against infection by bacilli coli-communis and staphylococcus infection. It has given the best results in the hands of French clinicians. No bad after-effects from

its use have been reported. The field for its application is extensive. It promises to be useful, not only in the diseases directly due to streptococci, as puerperal fever and erysipelas, but also in streptococcus infection complicating or following other diseases, as in scarlatina, diphtheria, tuberculosis, etc.

ANTI-TUBERCULAR SERUM.

Koch's tuberculin is not, strictly speaking, a serum, nor is its action that of an antitoxine. It is a poison produced by the tubercle bacillus in its growth, and is supposed to cure by temporarily intensifying the morbid process going on in tubercular disease, thereby exhausting the activity of the infecting agents and permitting the vitality of the tissues to regain their ascendancy over the disease. The unexpected toxic effects produced in the human subject by the use of tuberculin at once limited its use, and brought the remedy into discredit. With antitoxin the harmful effects which the diphtheria poison produces are borne by the animals which are inoculated, and not by human beings which are subjected to the treatment. Prof. Klebs' antiphthisin is a tuberculin with the toxic products eliminated, but retaining the germicidal properties. From its use Klebs reports a fair proportion of favorable results in all stages of human tuberculosis. Last month Koch announced a *new* tuberculin,² prepared through mechanical destruction of the bacilli. The remedy is given in graduated doses in the same way as the old tuberculin, but produces no unpleasant symptoms and no toxic reaction. Koch claims that the tendency of disease is to produce immunity against itself, and as evidence he points to the fact that in acute miliary tuberculosis the bacilli are present at first in great numbers, but gradually disappear with the progress of the disease. This he believes is the result of an acquired immunity induced by the disease, but the immunity in this disease unfortunately comes too late. His theory of treatment is that we must, if possible, imitate what takes place in acute tuberculosis, while avoiding the fatality of this disease, and this he believes he has accomplished in the production of his new tuberculin. The hopes and expectations which were so sorely disappointed in his old tuberculin can only now be rekindled by confirmatory evidence and results which time alone can furnish.

The anti-tubercular serum in current use is the discovery of Maragliano, of Genoa, the product of three years' experimentation and research. It is a serum presumably containing tuberculous antitoxine. Maragliano reports curative results in 16 per cent. of

the animals experimented upon, and amelioration in 48 per cent. additional. In man the serum, it is claimed, has given equally favorable results, but sufficient time has not yet elapsed to determine with certainty its curative value. The discoverer intimates that it can be of curative value only in cases where no destructive foci exist, and depreciates exaggerated expectations in advanced stages of the disease.

ANTI TETANIC SERUM.

Special difficulties operate against the successful use of this antitoxine. As time elapses after inoculation with the tetanus bacillus, the amount of serum required for curative effects rapidly increases, and before a diagnosis has been made the tetanus poison usually has accumulated in considerable quantity in the system. It has not been proved positively that the serum neutralizes the poison which has been received into the system before the injection of the serum, although it is capable of neutralizing poison formed after its administration. The serum is obtained from the blood of the horse, immunized after the method of Tizzoni and Cattani. In practice it has not yielded all the hopes raised by its advent, yet it is generally admitted to be a useful adjuvant in the treatment of tetanus, if not always a certain antidote.

SERUM-THERAPY IN THE TREATMENT OF INOPERABLE MALIGNANT TUMORS.

Occasional cures in malignant tumors after an intercurrent attack of erysipelas, led investigators to inoculate tumors with erysipelas germs, but the method proved impracticable, on account of the frequently fatal results from the erysipelas. Coley modified the method and got better results from the toxins of erysipelas germs, the germs themselves having been removed. More recently he used a mixture of the toxins of erysipelas and prodigiosus with still more favorable results. Numerous investigators confirm his observations, while other experimenters do not find the claims sustained. This remedy has evidently not yet passed through the tentative and experimental stage³.

SERUM DIAGNOSIS OF TYPHOID FEVER.

If the serum obtained from the blood of a typhoid patient be added to a culture of typhoid bacillus, the bacilli cease to move about in the fluid, then they become agglutinated in clumps, and, lastly, some of them become deformed and break down. Here we have the stages of inhibition, agglutination, and destruction of

typhoid bacilli. In marked cases these changes take place almost instantaneously on adding the culture to the serum ; in the majority of cases the reaction occurs within fifteen to thirty minutes, and in exceptional cases it may be delayed for several hours. These changes are known as the reaction of Widal, after Dr. Widal, of Paris, who only as late as June of last year⁴ first proved the reaction to be of diagnostic value in the early stage of typhoid fever, although Gruber and Durham had some time previously given the first exact description of the phenomena of agglutination. Widal further showed that the reaction was one of infection and not one of immunization. Of 422 suspected cases tested by Widal, Durham, Greene, Wyatt, Johnson, and others, during the latter half of last year, a positive result in accord with the clinical history was obtained in 312 cases. In only 12 cases did the diagnosis subsequently prove apparently misleading. Dr. Park, of the New York Health Department, reports the reaction obtained in 101 out of 130 suspected cases⁵ examined during the same period. At the Congress of American Physicians and Surgeons, held at Philadelphia last month, Dr. Shattuck, of Boston, reported that of 125 cases of typhoid tested at the Boston City Hospital, the reaction was absent in only one case. At the same meeting, Dr. Osler reported that in 44 cases examined at Johns Hopkins the reaction was obtained in every case. Both these observers stated that it was not usually obtained earlier than the end of the first week. Dr. Brannan, of New York, claims that in 95 per cent. of typhoid cases, the reaction is obtainable some time within the first nine days. Unfortunately, the reaction is not as marked in the first two weeks of the disease as in the latter half. Dr. Park obtained it in 75 per cent. of his cases in the first two weeks, and in 92 per cent. in the third and fourth weeks, and in no case with a clear clinical typhoid history had there been throughout the entire course of the disease no reaction at all. In the few cases in which Widal's reaction is obtained in other diseases, there is room for a suspicion of mixed typhoid infection. The reaction diminishes rapidly after the recovery of the patient. Blood drawn six months after recovery seldom gives any reaction.

Sero-therapy has been tried in nearly all known microbic diseases, and also in most of those in which the pathogenic agent has not yet been discovered, although supposed to be of bacterial origin. The limits of this paper will not, however, permit me to go further into the subject. That the serum treatment of all infectious processes may be the treatment of the future is the firm belief of many painstaking students of therapeutics. Whether their expectations

will be realized, time alone must demonstrate. While the outlook seems hopeful, and while the extended applications and generally satisfactory results of this method of treatment are rightly received with much enthusiasm, it must not be hastily accepted as a panacea for the cure of all infectious diseases, and its claims can only be established after it has stood the test of universal clinical experience, as well as extended scientific research.

REFERENCES.

- ¹ *Glasgow Medical Journal*, July, 1875; ² *Deutsche Medicinische Wochenschrift*, April, 1897; ³ Marmorek's anti-streptococcus serum, Maragliano's anti-tubercle serum, and Tizzoni's anti-tetanic serum are all manufactured in the biological laboratory of Parke, Davis & Co.; ⁴ *Semaine Médicale*, 1896, p. 259; ⁵ New York Academy of Medicine, June, 1897.

THE DIAGNOSTIC VALUE OF KNEE JERK.*

BY DR. D. CAMPBELL MEYERS,

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THE importance of the knee-jerk in the diagnosis of diseases of the nervous system must be my excuse for taking up a subject with which many of you are already so familiar; but I had hoped that, with the aid of this diagram, a discussion of a few of the points about it might be of interest to some of the members.

The knee-jerk is present, with very rare exceptions, in the healthy adult, but is often wanting in old age. The only instance in which I have myself found it lacking in apparent health is in the case of one gentleman of forty years of age, who suffered from syphilis two years ago. There are no other signs of disease whatever, and, as this symptom gave him some anxiety, I gave him a hypodermic of strychnia, but still without result. The knee-jerk has been certainly absent for the last year and a half to my knowledge, but whether it may have been absent or not previous to this time I am unable to say, and the fact that it may be congenital must also be considered. The ultimate result is somewhat uncertain, but the entire absence of any other symptoms makes it less likely to be of serious import than it otherwise would be. A few points might here be mentioned in regard to obtaining the knee-jerk in doubtful cases, and in these it is certainly well to remove the clothes, in order that the slightest contraction may be seen in the muscle. It is also well to test the reflex by tapping on different parts of the tendon, since a response may be obtained in some parts and not in others, keeping the patient's attention directed elsewhere during the examination, and having the limb placed in a suitable position.

Here a diagram, showing the course of the fibres from the Rolandic area to the peripheral termination of the motor and sensory muscle nerves, was explained. The function of the cells in the Rolandic area was then considered, with their influence over the

* Read before the Toronto Medical Society.

nutrition of the fibres of the cerebro-spinal segment ; their relation to secondary degeneration and in inhibitory impulses which are conveyed by the Pyramidal tracts. The reflex arc through the cord was then taken up, also the ganglion cells of the anterior horn with their prolongations as motor nerve fibres to the muscles forming the spino-muscular segment. The origin of the muscle sensory nerves and their connection to form the reflex arc was also discussed.

Having discussed some points about the diagram, I would like, first, to say something about neurasthenia, in which the knee jerks are usually increased. I have never seen any satisfactory explanation given of this symptom, which is generally ascribed to hyper-excitability of the cord. The true reason, to my mind, is that it is due to a weakness of the large cells in the Rolandic area, by which the fibres forming the pyramidal tracts are nourished, and the derangement in these cells leads to a loss of inhibitory power through these fibres by disturbed nutrition. This naturally would be felt first in that portion of the fibre farthest removed from its centre of nutrition, consequently in the termination of the fibre in the gray matter of the anterior horn.

The next trouble of which I would like to speak is multiple neuritis. Here both the motor and sensory nerves are generally affected simultaneously, but in certain circumstances it would appear that either one or the other suffer exclusively or to a preponderating degree. If, as usually happens, the motor nerves are implicated, the loss of the knee jerk is easily accounted for through interruption of the motor part of the reflex arc. If, however, the sensory nerves are exclusively affected, the question of the knee jerk becomes a much more interesting one, particularly since its loss, combined with good muscular power, makes this trouble easily mistaken for locomotor ataxia, an error in diagnosis which I believe frequently takes place, and which would account for the cure of tabes in some apparent cases of it. As you can see at once, an affection of the sensory muscle nerves would lead not only to a loss of the knee jerk, but also to an ataxia, and the mistake in diagnosis would be easily and only provided against by the advent of other symptoms, such as the Argyll-Robertson pupil and the bladder symptoms. A careful consideration of the history would also prevent mistake.

Ascending the sensory nerves to the cord we next come to the consideration of tabes or locomotor ataxia, and here we find the loss of knee jerk due to a lesion of the posterior roots and of the posterior columns, especially of the postero-external columns through

which the root fibres enter the cord. This would indicate quite clearly the seat of the loss of reflex action, one of the earliest signs of this disease. As mentioned above, the accompanying symptoms alone would make a diagnosis between this trouble and one of peripheral neuritis certain.

Passing now forward through the gray matter we come to an affection of the anterior horns, poliomyelitis. In this disease we have an absence of knee jerk from an interruption of the reflex arc at this point, and in consequence of this destruction we have as a natural consequence the wasting of the muscles in the regions supplied by the nerves from the diseased part owing to the degeneration of the fibres, which depend on these cells for nutrition, and in consequence of such degeneration the muscles waste secondarily.

We now come to the consideration of such diseases as implicate the centres above this reflex arc, and here it may be said in general that where the trouble is above the lumbar enlargement the knee jerk is increased ; while, if the disease implicates this enlargement, the knee jerk is lost. Take for example a transverse myelitis in its most common seat, the dorsal cord. Here at first the knee jerks are exaggerated owing to the inhibitory influence of the cerebrum being cut off. If, however, the disease descends the cord to the lumbar enlargement then the knee jerks are lost from a direct interruption of the reflex arc. It is found further that pressure on the cord above the lumbar enlargement, as from tumour or bone disease, leads to an excess in the knee jerks, first on the side of the tumour and later on both sides. This is due to pressure interrupting the pyramidal tracts since it is found that the *motor* fibres in the cord, just as in the peripheral nerves, are more easily influenced by pressure than the sensory fibres, a fact which makes the diagnosis between a focal myelitis in the motor parts of the cord and a tumour, inducing pressure, without any deformity, at times extremely difficult.

Among other troubles of the cord I would like to say a word about postero-lateral sclerosis in which there is an excessive knee jerk, although the post-columns are affected. The reason of this in a typical case would appear to be that the lateral columns are first affected, which leads to an excess of the knee jerk and that the posterior columns are only affected later, and then chiefly in their inner parts. At a later stage of the disease if the posterior root zone becomes implicated then the knee jerk is necessarily lost.

A word about the complete division of the cord. When this takes place the knee-jerks are lost if above the lumbar enlargement, and

if the division is permanent the loss is likewise permanent. In an interesting case of pressure on the dorsal region of the cord which was kindly operated on for me by Dr. Primrose, the knee jerks which had been markedly in excess before the operation entirely disappeared after it and remained so for several days when they returned and remained. Any sudden injury of the cord which did not produce permanent results would likely be followed by the same return after a time.

In conclusion let me mention an ordinary result of apoplexy caused by injury in the internal capsule. Here, as a result, we would find an increased knee jerk on the side opposite to the injury, as might be expected. We are not, however, so prepared to find along with this an increase on the same side some time after the attack. On talking the matter over with Prof. Déjérine, of Paris, he said he thought the phenomenon might be accounted for by degeneration of the uncrossed fibres in Turck's column. A more satisfactory explanation to my mind is, that since in normal conditions each half of the brain exercises a control over the same half of the body in proportion as the two sides are used together ; hence there must be a degeneration of these fibres from the injured half of the brain, which comes on slowly and leads to the development of this symptom. The exact course of these fibres has not yet been worked out.

Selected Articles.

THE TECHNIQUE OF STAINING BLOOD FOR MICROSCOPICAL EXAMINATION WITH EHRLICH'S TRI-ACID SOLUTION.

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ON November 26, 1895, I read a paper before the Richmond Academy of Medicine and Surgery, entitled "The Importance of a Microscopical Examination of the Blood in Disease—with Lobar Pneumonia in Illustration."* Since that time I have steadily urged the many decided advantages to be derived from this means of diagnosis, not so much in the ordinary "blood diseases," although it is very useful here, but more especially in such general diseases as pneumonia, tuberculosis, typhoid fever, malignant growths, etc.

The real worth, apart from its diagnostic value, of this method of investigating the corpuscular elements of a fluid of the body which must necessarily be more or less susceptible to any pathological changes which may be going on in any of the diseased organs, is the ease with which it may be employed by the profession at large, and the decided information that may be gained therefrom as the patient passes through the successive stages of his disease. After all, nothing recommends a technique more favorably than its simplicity and ease of application. This is what I claim for Ehrlich's tri-acid stain, used as I am in the habit of employing it.

Inasmuch as my object in explaining my technique will be to urge the practising physician to use it in his routine work, I shall give the procedure in detail, stating sincerely that if he is not successful it is due to a want of attention to the minutiae. The

*Virginia Medical Monthly, Vol. xxii., No. 10, p. 1,037.

various steps of my technique may be included under the following six headings, viz. :

First. The cleansing of the cover glass.

Second. The preparation of the lobe of the ear.

Third. The securing of the specimen.

Fourth. Allowing it to dry in the air.

Fifth. The fixation of the specimen.

Sixth. The staining of the same.

First, as to the cleansing of the cover glasses. I usually prepare enough to make from fifteen to twenty specimens, *i.e.*, from thirty to forty covers. I wash them first with ether and then with alcohol, using for this purpose an old clean linen handkerchief. After they have been well cleansed in this way they are put upon a clean piece of writing paper or a prescription blank. Care should be taken not to handle them with the fingers after they have been made ready for use. If this precaution is neglected, it will be found that the staining fluid will not spread evenly and uniformly over them.

Second. I usually prefer the lobe of the ear, especially when my patient is a woman. It is less sensitive than are the fingers, its integument is thinner, and the patient is spared the sight. The lobe or lobule is first thoroughly cleaned with ether and then with alcohol. I use considerable friction with the old handkerchief during this process, with the view of causing a local hyperæmia. The lobule is then pricked about its centre, sufficiently deep, with an ordinary pocket lancet, made aseptic by passing it through the flame of a Bunsen burner or that of an alcohol lamp several times, to cause the blood to well up and form a good-sized drop. No pressure should be used to make an increase in the flow of the blood, for such a procedure causes the corpuscles to become irregular in their shape. Of course, the index finger can be prepared in the way I have indicated, and the blood obtained from it, constriction having been applied to its proximal end prior to the puncture.

Now we are ready to secure the specimen of blood. A cover glass is carried from the paper to the lobe of the ear by means of a small pair of tweezers. It is placed lightly upon the drop of blood, and when withdrawn carries with it a considerable portion of the blood. This cover glass is then grasped diagonally on its corners between the thumb and index finger of the operator's left hand, with the drop of blood upward. A second cover glass is then placed upon the first with the tweezers, in such a way that it is square to the thumb and index finger. This arrangement allows them to be

drawn apart easily. They are then pressed together between the thumb and index finger of the operator's right hand. Finally they are to be drawn apart by a rapid sliding motion from left to right, not by raising the upper one from the lower. The other specimens are obtained in like manner. To secure a good specimen by this plan will necessitate both care and practice, but with a little patience any one can secure a fairly good one in a very short time. It is at this point of the process that an artificial poikilocytosis is often produced. This should be borne in mind and taken into consideration in examining the cover. It is not very marked at any time, and the operator will find that it disappears in direct proportion as he gains experience and dexterity in manipulating the covers. The blood-stained sides of the cover glasses are turned up, placed upon the paper, and allowed to dry in the air. The time required for this is not long. By the time that all the covers have been smeared with blood, those made in the beginning will be quite ready for the fixation process. Working moderately fast, no time may be lost from the beginning of securing the specimen until it is ready for the microscope. This part of the technique will have consumed from three to five minutes.

The specimen may be fixed in either of two ways, both of which have given me uniformly good results. First, by equal parts of ether and alcohol. If the operator has the time and can wait on this method, I believe that it will give as good results as that obtained by heat. I allow the specimens to remain in this mixture of alcohol and ether from twenty to thirty minutes. This length of time I have found to be quite sufficient. However, some authors advise that they be left in the mixture for two hours and upward. I have never found it necessary to take so long a time, and I am of the opinion that a half-hour is enough for all practical purposes. It might be well to add that, the limits of time having been given as a guide, the operator may investigate the matter for himself. The second method is that by heat. This method has rapidity to recommend it, and indeed the material difference between the two methods, as I have come to observe, is a question of time, the former requiring more than the latter. I generally use a small oven about six inches square. It is very simple in structure and can be easily and cheaply made. It is made of copper and has a central shelf in its interior, upon which are placed the covers. At the back there is attached a metal ring, fitted with a thumb screw, which, sliding upon a rod, intended to support the oven, enables the operator to secure any desired distance from the flame. The thermome-

ter is attached to the top. The door may be either sliding or hinged. The heat may be furnished by an alcohol lamp or by a Bunsen burner. The heat is gradually increased until the temperature reaches 120°C . (248°F .) and remains there for a few moments. The temperature must not pass beyond 120°C . After allowing the ether-and-alcohol mixture to evaporate from the covers or letting them gradually cool, according to which method has been used, they are then ready to be stained. Ehrlich's tri-acid staining fluid may be prepared according to the following formulæ:

Saturated watery solution of orange G.....	125
Concentrated watery solution of acid fuchsin, containing a twenty per cent. solution of alcohol	125
These are mixed and then is added :	
Absolute alcohol.....	75
Saturated watery solution of methyl green...	125

Or,

Saturated solution of orange G.....	50 cm.
Saturated solution of acid fuchsin	60 "
Saturated solution of methyl green.....	75 "
Distilled water.....	100 "
Absolute alcohol.....	50 "
Glycerin	15 "

These several ingredients are to be thoroughly mixed and allowed to stand fourteen days before using. A thick sediment forms at the bottom of the bottle, which should not be disturbed or shaken.

A few words about making the saturated solutions of the three coloring materials are necessary. I prefer using Grubler's stains, for they give me better results. Three four-ounce bottles are filled with distilled water and a small quantity of orange G. is put in bottle No. 1, a small quantity of acid fuchsin in No. 2, and a small quantity of methyl green in No. 3. As soon as the water has taken up the stain, an additional quantity of staining material is added, and this process is continued until a deposit begins to form upon the bottom of the bottles, indicating that the solution has become saturated. After they have become saturated they are allowed to stand for four days, and the solutions are not to be filtered. When the tri-acid solution is to be made, care must be used not to shake bottles Nos. 1, 2, and 3. Close attention to small details will be properly rewarded.

When used, this preparation stains the hæmoglobin yellow, the nuclei green, the eosinophile granulations deep dark gray, the neutrophile granulations intense violet. The hæmoglobin is colored by the orange G., the acidophile granulations by the acid fuchsin, the nuclei by the methyl green, and the neutrophile granulations by the acid fuchsin and methyl green. From this it may be seen that if any particular part of the cell is not stained sufficiently that special stain can be increased. The quantity of staining fluid made by the last formula will last an ordinary lifetime, for it does not become impaired by age.

The covers are stained with this fluid by passing over them a glass rod which has been previously passed into the centre of the bottle. After allowing them to dry they may be examined either dry or mounted in balsam. I prefer the former method, but believe that the beginner will secure better results by mounting in balsam. I have used this method of staining for two years, and find that it gives better results than any other which I have tried. From the time that the first specimen is begun, until it is ready for the microscope, fixation by heat will require from ten to fifteen minutes.

In concluding it may be well to observe that blood mounted in this way may be sent by mail or express to a hæmatologist for examination under the microscope, without injuring the cells.

Progress of Medicine.

PÆDIATRICS

IN CHARGE OF

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ARTHRITIS DEFORMANS.

A case of this disease was presented before the Pædiatrical Society by William Stowell, M.D. (*Archives of Pædiatrics*, October, 1896). The patient, a little girl of nine years, suffered from a marked degree of arthritis deformans. She was first seen in 1895, but the disease had been then in existence for two years. At that time she was in a very helpless condition, being unable to sleep except in a sitting position. The shoulder and elbow joints were painful and more or less ankylosed, and the head was immovably flexed almost upon the chest. She had been given the usual tonics and internal remedies, but had received benefit chiefly from the persistent use of massage. As a result of this treatment, she was now very much better, and could even assist in dressing herself.

RELAPSE IN SCARLET FEVER.

The subject of relapse in scarlet fever is discussed by Crozer Griffith in an article in *The Quarterly Medical Journal*, Montreal, (1896, Vol. XXV., No. 2). In 2,000 cases admitted to the Bagthorpe fever hospital, fourteen suffered from second attacks whilst actually under observation. In these cases the second attacks were marked by a rash lasting from one to four days, and by sore throat and fever.

In estimating the frequency of relapse several sources of error are present. An erythematous rash is common in such complications as nephritis or tonsillitis. Rendu interprets the rash as a streptococcus manifestation, and states that a pultaceous angina is always present, proving a source of secondary infection. Such erythemas, however, pass off rapidly, and may be excluded in the cases observed by Griffith.

The question as to whether the second attack is an auto-infection or due to a second infection from neighboring cases is referred to. If the latter supposition is correct, it would be an argument against placing large numbers of cases in a ward.

CASE TREATED BY ANTISTREPTOCOCCIC SERUM.

M. Gamgee read notes before the Birmingham Pathological and Clinical Society (*British Medical Journal*, March 3, 1897) of a case of acute infective epiphysitis of the upper end of the femur, in a boy aged 8 years, healed by incision and by injection of antistreptococcic serum. The symptoms commenced on November 11, 1896. On November 14 the temperature was 105.2° , and on the 15th, 102° . The incision was made on the 15th, when about an ounce of pus was let out. The first injection of serum (3 c.cm.) was made on November 17, and during the eight hours following the temperature fell from 103° to 100° . The injection was repeated every twelve hours, and almost invariably had the effect of reducing the temperature. After injection of one dose of 5 c.cm. the temperature fell from 103° to 99° in seven hours. The patient recovered. It was impossible to say how much of the improvement was due to the serum and how much to the incision.

PSYCHIATRY AND NEUROLOGY

IN CHARGE OF

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HAMILTON.

IN WHAT CASES OF INSANITY IS THYROID EXTRACT USEFUL?

Dr. C. L. Dana reported at a meeting of the Practitioners' Society, New York, a case of insanity cured by thyroid extract. The patient, a young lady, unmarried, twenty-eight years of age, with no especial neuropathic taint in the ancestry. One older brother had Basedow's disease, from the age of thirty-five to thirty-nine, when he was cured, and has remained so. One younger sister had hystero-epilepsy; a second brother is of a nervous temperament, and suffers from insomnia; and another sister has attacks of migraine. The duration of her mental trouble, which commenced with a mild form of confusional insanity, was two years. On account of the steadily progressive character of the trouble and the apparent evidence of serious degenerative changes coming on in the brain the question finally arose whether an operation for the removal of the ovaries should not be attempted as an experiment, although the pelvic organs had been carefully examined and found perfectly normal. Dr. Dana advised that before attempting any such operation the patient be placed upon the thyroid extract, and to push the drug to the point of tolerance. She had been previously treated with the thyroid extract but without any results. Treatment was commenced by administering five-grain thyroid tablets beginning with fifteen grains a day and gradually increasing the doses until she was taking sixty grains a day. At the end of two weeks symptoms of improvement appeared and at the end of three months she has become thoroughly sane. She talks intelligently and coherently, has no delusions and writes a sensible and well-worded letter. The improvement has been so striking and progressive, and so definitely associated with the use of the thyroid, that there can be no doubt as to its being the cause of the change.

The fact that a brother suffered from Basedow's disease in a very typical way is a curious illustration of what might be called a thyro-pathic tendency in the family. He thought the cases of insanity in which the thyroid extract proved beneficial probably were cases in which there was some derangement of the thyroid gland.

In the discussion which followed Dr. F. P. Kinnicutt said he believed the treatment of insanity with thyroid extract had not been very encouraging, and therefore, the case reported was the more interesting. He thought the very fact that in a large majority of cases the treatment was without effect, while now and then it was so strikingly successful, would indicate that in the latter the trouble was probably connected with diminished or perverted secretion or function of the thyroid gland. It was known that there might be interference with the function of the gland and that structural change might even exist without any anatomical signs being detected during life. He repeated that it seemed fair to assume that in the cases of insanity in which the extract was of benefit there was destruction or perversion of function in the thyroid gland.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF

PRICE-BROWN, M.D.,

Laryngologist to Western Hospital; Laryngologist to Protestant Orphans' Home.

SPONTANEOUS REDUCTION OF SEPTAL DEVIATION BY REMOVAL OF OBSTRUCTIONS IN THE OPPOSITE NOSTRIL.

Dr. P. Lacroix (*Arch. Internat. de Laryn., Otol. Rhinol.*) gives the history of two cases of double nasal stenosis, arising from obstructive lesions. In each case the removal of spur, hypertrophy of turbinated, polypus, etc., from the one side was followed by shrinkage of the spur or thickening of the septum on the other, obviating the necessity of further operative interference.

EXOSTOSIS OF SEPTUM AS A CAUSE OF CHRONIC NASOPHARYNGITIS.

C. H. Knight, of New York (*Laryngoscope*), speaks of chronic nasopharyngitis as one of the most obstinate and annoying disorders of the upper air tract. Its most prominent symptom is the sensation of the presence of mucus behind the soft palate, together with a frequent desire to remove it by hawking. Although there are many causes which might induce this pathological condition, exostosis is the one most likely, on a cursory examination, to be overlooked. It occurs on the deeper portion of the septum, beyond the triangular cartilage, and may extend backwards as a ridge on the side of the vomer and parallel to the floor of the inferior meatus. Sometimes the exostosis may extend across the fossa, and even unite with the corresponding inferior or middle turbinated bone. All this may be hidden from view, either by thickening of the anterior end of the inferior turbinated, or by a curve of the cartilaginous septum. The application of a solution of cocaine will render the true condition apparent.

Behind such an obstruction there is always more or less hyperæmia, owing to the rarefaction of the air during inspiration; con-

sequently, the parts are more susceptible to the influences which produce acute catarrhal conditions. The projection likewise offers a site for the lodgment and retention of the nasal secretions, which, as they decompose, become a further source of irritation.

Knight desires to impress upon the minds of his readers the fact that he is directly opposed to all unnecessary intra-nasal surgery. But in these cases he thinks it imperative to remove the obstruction, so as to produce an even surface, thus putting an end to posterior rarefaction and also septal accumulations. By this means free drainage is secured, a most essential factor in the relief of post-nasal catarrh. The removal of these bony growths is usually best accomplished by the use of the saw.

INHALATION OF FORMALIN IN CATARRH AND OTHER DISEASES OF THE RESPIRATORY TRACT.

J. Lardner Green (*Brit. Med. Jour.*), after accepting the theory of the presence of micrococci in all catarrhal affections, advocates as the most rational treatment the use of germicidal remedies; and as the most direct method, the careful inhalation of these remedies, either in the form of gas or vapor. He says the best results have been from the vapor of formalin, one or two drops being placed inside a Jeffery's respirator. If the disease is in the acute stage, one drop will suffice at a time. He strongly advises a trial of formalin in the early stages of tuberculosis of the lungs. It will usually be found under the microscope that the number of both the micrococcus pneumoniae and also of the bacillus tuberculosis which is constantly to be found in the sputum will be rapidly lessened. Of course every subsidiary aid, in the way of tonic medicines, judicious diet, and hygiene, require to be carefully attended to.

ADENOIDS AS THE CAUSE OF DEAF-MUTISM.

Sendziak, of Warsaw (*Journal of Laryngology*), has an interesting article upon this subject. He quotes from many authors, besides giving his own experience. The number of deaf mutes affected by adenoids, reported by these observers, runs from fifty-eight to seventy-four per cent. of the total number affected. Wilhelm Meyer, the discoverer of naso-pharyngeal adenoids, gives the rate at 74.8 per cent.

In striking contrast to this condition is the comparative immunity of healthy children from adenoid enlargement. Meyer himself says that only one per cent. of otherwise perfectly healthy children

have adenoids, while other reliable authorities gradually ascend the scale, the highest being only thirteen per cent. The immense difference between the two conditions cannot be merely a coincidence.

The cause of the deafness in most cases is the closure of the eustachian tube, produced by the pressure of the adenoid growth, the result being absorption of the air within the middle ear, and the consequent collapse of the drum membrane upon the ossicles. In other instances, the results of the obstruction are directly inflammatory, commencing in the eustachian tube and extending to the middle ear.

In regard to treatment, as many cases have been recorded where ablation of the adenoids has cured the deafness, and been followed by the acquirement of speech, the importance of radical treatment in all cases is insisted upon. The method of operation must be decided by the operator himself. Sendziak uses Jurasz forceps; Gottstein curettes, and the finger nail, singly or combined as required, disinfection being considered an essential factor. As a preventative measure, wherever adenoids exist to an extent sufficient to interfere with normal nasal respiration, they should be removed. Early age and delicate health are neither of them contra indications.

Gour (*Thèse de Paris, No. 175*) in an article upon adenoid vegetations and their bacilli, makes the statement that "Operations for their removal should be complete, as remnants left do not atrophy."

HYPERTROPHY OF THE GUMS.

Christopher Heath (*Brit. Med. Jour.*) gives an outline of the history of several cases of this unusual disease. The first occurred thirty years ago in a child two and one-half years old. It originally appeared when the child was seven months old. Mr. Erichsen freely excised the exuberant growth, and then cauterized the gums with the actual cautery. Although the child improved very much, the cure was not permanent. Two other children in the same family were slightly affected. They were considered to be cases of *molluscum fibrosum*.

The next case was ten years later, in a child aged four and one half years. Mr. Heath removed each hypertrophied gum in one piece. The recovery was complete.

The last case was that of a young man aged twenty-six. The hypertrophied gums were excised very freely. This was followed by the application of Paquelin's cautery. A perfect recovery resulted.

IN CLEFT OF HARD PALATE ATTENDED BY GREAT HYPERTROPHY
OF INFERIOR TURBINATEDS, IS OPERATION FOR THE
CLEFT ADVISABLE?

At a recent meeting of the Laryngological Society of London this question was discussed on the presentation of two cases by Edward Law. The ages were respectively sixteen and twenty-two years. In both the inferior turbinateds were very large, pressing on the septum and partially filling up the cleft. Some of the Fellows were in favor of reducing the turbinateds and closing the fissures. As, however, the turbinateds acted in some measure as an obturator, while the patients only complained of indistinctness of speech, the removal of which could not be guaranteed by operation, the rest of the speakers urged non-interference, save by the use of dentist's plate. Dr. Law himself was of the same opinion.

FIBROMA OF THE PALATE.

At the last meeting of the British Lar. Rhin. and Otol. Assoc., Lennox Browne gave the history of three cases of fibroma of the palate, all successfully treated by electrolysis. In one, a professor of music, aged forty-three years, after an interval of nine years, there had been no return. In another, a lady aged seventy-five years, death did not occur until three years afterwards, when she died of another disease. The third case was that of a clergyman aged fifty-five years. He was always able to perform his clerical duties as chaplain, although it required from ten to twenty treatments by electrolysis per annum to keep the growth under control. Lennox Browne thought that in each case there was an element of sarcoma in the fibromatous tissue.

THE LINGUAL TONSIL.

Brady, of Sidney, New South Wales (*Journal of Laryngology*) describes this body as a true adenoid overgrowth, and not a mass of dilated blood vessels, as it is sometimes described to be. It is situated at the base of the tongue, and is divided into two lobes by the medial line. When large enough to require operation, instead of removing it by galvano-cautery—the plan usually adopted—he advocates the use of a tonsillotome made specially for the purpose. He reports having used the instrument successfully in thirty-four cases in private practice. Perhaps the southern cross has some special influence in developing lingual adenitis!

DR. LACK'S METHOD OF EXAMINING THE LARYNX IN INFANTS.

Placing the child in the usual position, the index finger of left hand is passed well into the mouth, and hooked round the hyoid bone, which is pulled forward. The rest of the finger acts as a tongue depressor, and the knuckle as a gag. A small mirror, passed in the ordinary way, gives a good view of the larynx. He says the method causes no pain.

REMOVAL OF FOREIGN BODIES FROM THE ŒSOPHAGUS BY AID OF THE X RAYS.

An article in (*Bulletin de l'Acad. de Med.*) draws attention to the use of X rays in locating coins, etc., in the œsophagus. They are usually arrested in the narrowest part. Radiography shows the exact location. An incision down to the spot, without penetrating the gullet itself, will then allow the foreign body to be pressed up and out through the mouth.

A recent issue of (*Harper's Hospital Magazine*) gives an illustration of a copper lodged in the œsophagus of a child opposite the second rib. It was located by the X rays; and removed by direct incision. The child, aged about six years, made a good recovery.

NEW INSTRUMENTS.

The post-nasal lymphatome, designed by Jacob E. Schadle, St. Paul, (*Laryngoscope*) is made on the same principle as the Mathieu tonsillotome, but possessing a curve and angle to suit the outline of the region to which it is to be applied. The advantage claimed for it is that in removing adenoids by it, injury to normal tissue becomes impossible.

A. M. C. Geddes (*Brit. Med. Jour.*) gives the description of a curved tracheal forceps, which may not only be used for removing foreign bodies from the larynx, but also from the ear, nose, and throat.

ORTHOPÆDIC SURGERY.

IN CHARGE OF

CLARENCE L. STARR, M.B. Tor., M.D. Bel. Hosp. Coll.,

Surgeon to Industrial Refuge.

LOOSE CARTILAGES IN JOINTS.

There are apparently two classes of so-called loose cartilages or loose bodies usually found in joints. The large ones, varying in size from a large pea to a horse-chestnut, are found most commonly singly, and are, according to Senn, usually traumatic in origin. That they are often caused by the splitting off of a portion of the articular surface is beyond question, as numerous cases are on record of the removal of loose bodies shortly after a fall or wrench of the joint.

Mr. Howard Marsh records several such cases, notably one where three weeks after a wrench of the knee a loose body was removed which was pronounced to be a piece of the articular surface.

The smaller bodies often found in joints are to us much more interesting for purposes of study, as there is still some uncertainty as to their etiology and pathology. These are found fairly uniform in size, having much the appearance of a melon seed or small bean, and are usually multiple.

Mr. Thomas Smith, of St. Bartholomew's Hospital, London, removed over four hundred from one joint. (Howard Marsh, "Diseases of Joints.")

Dennis ("System of Surgery") thinks these are enchondromata which become detached from the articular cartilages or from a fringe of the synovial membrane.

Lovett, of Boston, says "these seem at times to be the remains of a blood clot from a preceding acute synovitis, or the consolidated residue of an effusion very rich in fibrin."

Senn ("Tuberculosis of Bones and Joints") says "the so-called *rice bodies* are now known to be of a tuberculous nature, resulting from a formation of new tissue on the surface of the synovial mem-

brane," and although bacilli have not been found in these bodies, yet their tubercular nature has been verified by successful implantation experiments. To Reidel ("Zur Aetiologie der Fibrinösen Fremdkörper im Knie") belongs the credit of having first pointed out and accurately described the minute structure and tubercular character of these bodies.

As to treatment, all are agreed that, when these bodies are located and can be fastened by means of a pin before operation, their removal is called for. In cases, on the other hand, where the bodies cannot be located at time of operation, there is a difference of opinion as to the advisability of opening the joint. Mr. Frederick Treves says a joint should not be opened unless the body can be located and fastened before operation.

Generally it may be stated that where the loose body gives but little inconvenience, and can be kept from passing between the ends of the bones by means of a knee cap or adhesive strapping, an operation is not advisable. On the other hand, since this condition occurs most frequently in young and otherwise healthy adults, an operation which does not entail too much risk is advisable.

Before the introduction of antiseptic surgery Larrey reported before the Society of Surgeons in Paris, 131 cases with 28 deaths; 21.3 per cent. Over against this we place the report of Woodward's (*Boston Med. and Surg. Journal*, April, 1889), 105 cases with only one death, and in that one some doubt could be attached to the asepsis of the operation.

HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

WILLIAM OLDRIGHT, M.A., M.D. Tor.,

Professor of Hygiene in the University of Toronto ; Surgeon to St. Michael's Hospital

ASSISTED BY

J. W. SMUCK, M.D.

REPORT OF PROVINCIAL BOARD OF HEALTH.

Monthly report issued by the Provincial Board of Health, showing the deaths from contagious diseases in the province as reported to the Registrar-General by the division registrars throughout the province for the month of April, 1897.

The Act relating to the Registration of Births, Marriages, and Deaths requires that monthly returns of contagious diseases be made by the division registrars on or before the fifth day of every month. The returns for April have been received by the Department up to the 15th, before tabulation, in order to have them as complete as possible.

Total number of municipalities in the province, 745.

Number making returns to May 15th, 348.

Table showing total deaths returned from the several contagious diseases for a population of 1,119,397, which were caused as follows :

	Population	Number of deaths from and rate per 100.						Total and Rates per 1000 pop.
		Scarlatina.	Diphtheria.	Measles.	Whooping Cough.	Typhoid Fever.	Tuberculosis.	
Cities.....	377,349	14 (0.4)	24 (0.7)	1 (0.03)	0 (0.00)	2 (0.06)	65 (2.0)	106 (3.19)
Towns and villages reporting.	212,416	5 (0.3)	6 (0.3)	3 (0.1)	1 (0.06)	3 (0.1)	16 (0.9)	34 (1.76)
Townships reporting.....	529,632	3 (0.07)	14 (0.3)	2 (0.04)	4 (0.09)	3 (0.07)	45 (1.0)	71 (1.57)
	1,119,397	22 (0.2)	44 (0.4)	6 (0.06)	5 (0.05)	8 (0.08)	126 (1.3)	211 (2.1)

P. H. B.

TUBERCULOSIS.

Before the Committee of Agriculture at Ottawa recently, Dr. McEachran, V.S., Chief Veterinary Inspector of the Department of Agriculture "advised the expenditure of \$100,000 this year as a compensation to get rid of the disease by applying the tuberculine test, and slaughtering animals in all herds found to be affected, and disinfecting the premises." Hon. Mr. Fisher did not agree with the scheme, and was supported by Hon. Mr. Dryden, who was present. It seems to be the idea of these gentlemen that to properly carry out the work would require millions, and then they are not sure that it would lessen the ravages of so fell a destroyer as tuberculosis. The results of attempting such work have not been very successful in the United States where it has been tried. No doubt great good can be accomplished by educating the owners, urging care in isolation, disinfection, etc., but for any one to think there is no special need for alarm is wide of the mark indeed. While the disease is not a new one by any means, every step which tends to lessen its ravages is destined to make the work much easier in the future. Care and consideration should be exercised, but the Government can be easily penny-wise and pound-foolish. It is expected that the Royal Commission of the British Government will throw new light upon the subject, and our farmers and stock-raisers will do well to be ready to receive the suggestions which will be made. In our large cities the food supply is dependent upon this class of the country, therefore our city population have a right to demand proper care in the raising and supplying the market with healthy animals and animal products.

In the same connection might be noted the opinion of Prof. James Law, head of the Agricultural Department, Cornell University, as given to the Central New York Farmers' Club in response to a resolution of the club asking for the same.

Professor Law briefly states the position of the state commission to date, and shows the futility of undertaking systematic work without co-operation of the owners, and a sufficient grant to carry on the work. In the discussion which followed by the club one speaker said: "Tuberculosis in the human family is said by some to exist only through infection from the bovine family, therefore the question is of vital importance to all users of milk and other dairy products."

Dr. Huff, Inspector of Animals and Dairies of the Board of Health of Rome N.Y. gave some thoughts upon the pollutions of

milk which it would be well for our people to consider. Consumers sometimes asked the cause of the peculiar odor characteristic of new milk. He found that the filthy conditions of the stables were responsible for nine-tenths of the "animal odor" of new milk. Another cause was the lack of sufficient water of good quality. The cows were huddled together too closely in stables poorly drained. All the talk of milk containing the germs of disease seems to be of easy explanation when these things are considered. The surest guide to health is cleanliness in the production and handling of milk, etc.; the dairyman is a citizen, and our interests are his interests, so we would not profit anything by harsh methods.

When all these things are carefully considered the action of the Hon. Mr. Fisher might be modified as well as the recommendation of Dr. McEacheran.

RACIAL DETERIORATION: THE RELATION BETWEEN PHTHISIS AND INSANITY.

In a paper bearing the above title, read before the American Public Health Association at Buffalo, N.Y., September, 1896, by Lawrence Irwell, he points out the distinctive characteristics of the consumptive diathesis as peculiarities of complexion, hair, and eyes, often accompanied by very white teeth, which generally decay in early life, and perhaps more frequently accompanied by a "phthisical mania." From 35 per cent. to 50 per cent. of the idiotic are due to scrofula.

The apparent frequency with which tuberculous mothers transmit pulmonary phthisis to their offspring is explained by the proximity of the infant to the female parent for a long time after its birth.

It is well known that individuals of the phthisical type are alarmingly prolific. Sir Francis Galton says: "They (phthisical persons) certainly marry earlier, as a rule, than others, one cause of which lies in their frequent great attractiveness; and, again, when they marry they produce children more quickly than others."

Although the men and women who suffer from "consumptivity" are exceptionally fertile, large numbers of their children are carried off during infancy, and hardly any reach old age. If this were not so, racial deterioration would be very rapid.

"In some families even in the highest ranks of society," writes Dr. Strahan, "the susceptibility to tubercle bacillus becomes so great that, despite all that modern science, backed by wealth, can

do, the children die one after another in infancy, or succumb on the approach of adolescence. In other cases the degeneration from intermarriage or some other cause becomes more or less mixed in character, and while some of the children succumb to tubercular disease in infancy ; or, later in life, idiocy, suicide, epilepsy, etc., will appear in others."

Then, with regard to the relation between phthisis and insanity, it is said "that the phthisical and insane diatheses are interchangeable, is proved to the asylum physician every day."

The sufferers from congenital consumptivity are usually precocious. They are liable to "colds," however, and break down under strains that would not trouble ordinary children. As time goes on the sensitive nature displays itself, and they become unstable and erratic.

The marriage of a man of the tuberculous type with a woman of the same type is an injury to the community and a violation of the rights of unborn children. The marriage of an individual of the tuberculous type with a spouse in whose family there is a tendency towards insanity is equally reprehensible.

Physicians must recognize these facts and warn parents.

The writer claims to prove by this that it is not reasonable to suppose that any process, other than artificial selection in reference to marriage, will tend towards the extinction of the tuberculous type.

On the relation existing between consumption and insanity he quotes Dr. Clouston : "It is surprising how often both diseases occur in different members of the same family. No physician in extensive practice but has met with many such families."

Next criminality is dealt with, and he shows that a great many hereditary criminals show the consumptive diathesis. He closes the paper by saying : "If our race is to prosper the degenerated types of humanity, whose lives are prolonged by the scientific modification of the cosmic process, must make a sacrifice in the interest of the community at large by refraining from the reproduction of the species, so that man's forethought will act in the civilized world in identically the same manner as the laws of nature acted prior to the dawn of civilization.—*The Sanitarian*.

Editorials.

THE MEETING OF THE ONTARIO MEDICAL ASSOCIATION.

THE seventeenth annual meeting of this association was held in the Normal School building, Toronto, June 2 and 3, 1897. It was not the largest meeting since the society was organized, but it was one of the best. The supply of papers was so large that only a limited time was allowed to each reader, and discussions in many instances were cut short; and, although no time was wasted, the programme was not completed, many papers being taken "as read." Some think that the number of papers should be reduced, and longer discussions encouraged. This is probably correct, but how can we prevent a large number of contributions? The committee on papers and business has a very difficult task to accomplish. It may ask for papers, but it can scarcely limit the numbers. As a matter of fact, it is better to have too many than a very small number, inasmuch as the latter generally means a small attendance at the meeting. Probably the best solution of the difficulties would be to extend the time of meeting, making it three days instead of two. We think it was generally conceded that Dr. Britton and the rest of his committee on papers did good work before and during the meeting.

The duties devolving on the Committee of Arrangements, with Dr. Machell as chairman, were performed in a very satisfactory manner. The entertainment given to the visiting members by the residents of Toronto at the Royal Canadian Yacht Club was largely attended, and thoroughly enjoyed by those present. It was probably the best of the sort we have had in Toronto. The after-speeches were short and good; but it might be well to slightly shorten this part of the programme. Dr. Ross entertained very generously on the beautiful yacht *Cleopatra*. The interesting professional reminiscences of Coventry, Samson, O'Reilly, and others

furnished an intellectual treat that was highly appreciated by those assembled in the cabin. The Toronto Street Railway Company very kindly gave the members a trip from the Esplanade to the General Hospital, where a few patients were presented.

The president occupied the chair at all the general meetings, and made an admirable presiding officer. The profession of Toronto have a warm feeling in their hearts for Dr. Coventry, and will always extend a cordial welcome during his future visits, which, we hope, will be frequent. We have much pleasure in publishing in this issue his presidential address, in which are discussed many matters of great interest to the general profession. In choosing a President for next meeting it was generally conceded that it should be a Toronto man. We don't understand why this city should be thus honored every second year, but we appreciate the kindness of non-residents in accepting the unwritten rule which appears to have prevailed for many years. The names mentioned at the recent meeting were Drs. Britton, Burns, Macdonald, and Ryerson. The general feeling was that any one of these would be acceptable; but only one could be elected, and all are satisfied, so far as we know, that Britton well deserves the honor which was conferred upon him. Toronto was chosen as the next place of meeting. There seems to be a general consensus of feeling that the majority, if not all, the meetings should be held in this city, because it is central, and attracts larger numbers than other cities or towns. However, the physicians of Toronto, and others who attended the meeting in Windsor, think that an occasional change is desirable.

BRITISH MEDICAL ASSOCIATION.

MONTREAL MEETING, 1897.

SINCE our last notice of what is being done in regard to the approaching meeting, considerable progress has been made towards the completion of the arrangements, more especially in the work of the excursion, printing and publishing, museum, and local entertainment sub-committees. The preliminary programme has been printed and distributed, some 16,000 copies having been sent to members of the association. It appears in the shape of a pamphlet of some fifty pages, neatly printed on heavy paper, with an artistic cover in colors. It is plentifully illustrated with lithographs and wood-cuts representing some of the chief points of inter-

est in Montreal, Toronto, and Quebec, more especially the university and hospital buildings.

Reference is made to the hotels and lodging accommodation in Montreal, and some useful hints to travellers are given in regard to securing berths, luggage, clothing, United States and Canadian money, etc. The excursions arranged for are described and their attractions set forth in a way which must arouse the liveliest anticipation among those whose privilege it will be to take advantage of the low fare, and enjoy the grand scenery of the St. Lawrence, the Saguenay, Lake St. John, or the grandeur of the Rockies. The local guide, which is in active preparation, will be on a more elaborate scale, and will form a volume of over two hundred pages. It will be distributed at the meeting.

Professor Adami left on the 22nd of May for England, and will be absent some six weeks. He has been delegated by the Executive Committee to visit the various branches of the British Medical Association in England, Scotland, and those in Dublin and Belfast, advising with them and giving all instructions required to facilitate arrangements for the journey, and at the same time to endeavor to secure as large a contingent from across the Atlantic as possible. He will also confer with and assist the English secretaries in regard to securing papers for the meeting, and members to take part in the discussions. The president-elect, Dr. T. G. Roddick, M.P., has visited Ottawa, Toronto, and London, with a view of furthering matters connected with the branches of the association there. The Montreal branch has made remarkable strides in its membership during the past year, the number having increased from 70 to 243. The transportation difficulties, which at one time threatened to prevent a number from coming, are being gradually overcome.

The Local Entertainment Committee will have a full and attractive list of entertainments provided for the guests, details of which we will give later. A committee of ladies is being organized to assist the sub-committee. The Golf Club has arranged for a series of matches to be held at their magnificent new grounds at Dixie, to take place on Thursday, September 2nd, and a cricket match is being arranged for among the Montreal clubs. Dr. Roddick has written to all the branches of the Association, both English and colonial, requesting them to send delegates. Answers have already been received from a number, most of them stating that the matter will be placed before the next meeting of their councils.

A DOMINION STANDARD.

DR. COVENTRY, in his presidential address, referred to the anomalous condition of the medical profession in Canada on account of the wall which has been thrown around each province in connection with licensing powers. According to existing regulations no legally qualified practitioner can go outside his own province to practice medicine without passing a special examination. The doctor suggested as a remedy for this condition of things, which nearly all physicians in Canada think unfortunate, that a Dominion Board should be established with power to adopt a certain standard for British North America.

The subject is, of course, anything but new, but is surrounded by so many difficulties that all efforts to provide a remedy have up to the present time been unsuccessful. However, it will be remembered that a special committee of the Canadian Medical Association have been considering the subject for the last three years, and brought in a somewhat extended report at the last meeting, which was held in Montreal in August, 1896. They recommended that there should be a common standard of medical requirements for the whole Dominion, with the hope that each of the provinces would accept such standard, and that thereafter inter-provincial registration should be allowed.

The committee recommended certain requirements for: (1) Matriculation, (2) Professional Education, (3) Examination. Of these the most important was the following with reference to medical education: "The curriculum of professional studies shall begin after the passing of the matriculation examination, and shall comprise a graded course in the regular branches of four yearly sessions of not less than eight months of actual attendance on lectures in each year." The subjects to be included were then named. Dr. Thorburn, of Toronto, at the same meeting referred to the subject in his presidential address. He said: "The want of uniformity of registration in the different provinces is not only detrimental to our common progress and national unity, but has a tendency to drive away many good and valuable men from our land." He then went on to suggest that throughout the Dominion there should be a four years' course of eight or nine months each, and expressed the belief that such a course would be superior to one of five years of six months each, with one summer session of three months.

We refer somewhat in detail to certain views that have been expressed in this important question with a desire to keep it before

the profession. The anomalous condition of things, as Dr. Coventry expresses it, is a great misfortune for this country. It is not at all in consonance with the spirit of confederation or imperial unity. We only hope that the corporations of the different provinces will consider the matter in all its aspects, and not be fettered by any narrow provincialism.

THE VICTORIAN ORDER OF NURSES FOR CANADA.

IT may seem ungracious to criticize adversely the establishment of a new body of nurses in Canada, as recommended by Vice-Royalty and many prominent citizens, whom we so highly respect; but we have to recognize the fact that there is a very general, and a very decided feeling of opposition to the scheme in various sections of the Dominion. The discussion at the recent meeting of the Ontario Medical Association showed very plainly the opinions held by the mass of our profession in this province. One of the speakers said he considered the scheme crude and impracticable. Another thought it was quite unnecessary, to say the least about it, to insinuate that Canada needed more Dr. Maclures, because this sort of attack was irritating and unjust. We are inclined to believe that this is putting the matter too strongly, as we can hardly think that any of the promoters desired to be in any sense offensive; but we must submit that the following sentence (page 8, announcement published by committee) makes rather unpleasant reading: "In the sparsely settled parts of Canada what is needed now more than ever before is the presence in scores of localities of skilled physicians who have forgotten the meaning of personal ease—Dr. Maclures in Canada—men who believe that the nobility of living is to help others and not to roll up riches."

What kind of nurses will be produced under the new system? It is well known by all who have had any practical experience that it is an exceedingly difficult matter to instruct nurses so that they may be legitimately considered skilled. By a process of evolution, and through the untiring exertions of a large number of individuals in various cities of Canada, and various hospitals, public and private, we have now a body of nurses which is quite large enough (in fact, more than large enough) to satisfy all demands. The public can have but little conception of the enormous difficulties that have been overcome in reaching the present excellent standards in our "Training Schools for Nurses." This new order, which is

positively not required, is likely to do a gross injustice to our nurse-graduates, and demoralize our existing standards. In the long run the public will suffer from such changes. The promoters of the new scheme have not shown any feasible plan by which they can produce a set of nurses as efficient as those now available.

It is stated in the "announcement" that one of the objects is to train nurses who will attend the sick poor in cities in their own homes; but, as was pointed out by one of the members in the Ontario Medical Association, this sort of work is now carried on successfully by various organizations, such as "nursing at home missions" in different parts of Canada. Without referring in detail to the many other arguments for and against the new order, we have to say that there is a general conviction in the minds of physicians, in this part of Canada at least, that the scheme is "crude and impracticable," and likely, if carried out, to do more harm than good.

Meetings of Medical Societies.

ONTARIO MEDICAL ASSOCIATION.

THE seventeenth annual meeting of the Ontario Medical Association was held in the Normal School, Toronto, on Wednesday and Thursday, June 2nd and 3rd, 1897, the president, Dr. John Coventry, of Windsor, in the chair.

The secretary, Dr. J. N. E. Brown, of Toronto, read the minutes of the last meeting. Dr. W. Britton, of Toronto, chairman of the Committee on Papers and Arrangements, announced the programme of papers and the amusement which will be offered.

After the reception of guests and delegates, Dr. J. L. Davidson, of Toronto, and Dr. T. F. McMahon, of Toronto, opened the discussion in medicine on

SERUM THERAPY.

The preparation of the antitoxin serum from the horse was very carefully explained and the statistics of results fully given. Very favorable was the opinion of the speaker towards its use.

The antistreptococcic serum was explained, and special reference made to its use in puerperal fever.

The results obtained by Kitasato in the bubonic plague were mentioned, and it was thought that a serum had been found to stay its ravages. Passing reference was made to the work which was being done on the other infectious diseases as smallpox, scarlet fever, measles, etc.

Dr. T. F. McMahon, of Toronto, followed with the clinical results which he had received from the use of antitoxin in both private and hospital practice. He was very outspoken in his praise of the remedy in the disease, but pointed out that it must be used early to have the most beneficent action. He thought that antitoxin should be used in all public institutions that had charge of these specially infectious diseases.

Then followed a paper on

REMARKS ON MODERN THERAPEUTICS,

by Dr. J. T. Fotheringham, of Toronto.

The paper dealt more particularly with the various new remedies which had been introduced of late years, especially the various coal-tar products and serum-therapy.

The writer deplored the fact that too many of our physicians gave what might be termed "shot-gun" prescriptions, *i.e.*, if one remedy failed another might cure. It was always better to prescribe a single remedy or such simple combinations as would give a definite action upon the system.

Dr. J. A. Williams, of Ingersoll, recited a case of

INERTIA OF THE UTERUS FOLLOWING THE USE OF CHLOROFORM.

He had seen the case in consultation. It was one of those in which there was great difficulty encountered in extracting a very large child, fourteen pounds. The labor was prolonged to about eighteen hours. After delivery the uterus appeared to contract for a short time and then relax. There was a great deal of hæmorrhage. The hypodermatic use of Ergot, F. E., together with friction within the uterus and upon the abdomen, at the same time making use of injections of very hot water brought on the contractions, and a favorable result ensued. The writer discussed the various causes given by writers for this trouble, and said he was at a loss to know just what caused the inertia in this case. He advised the use of chloroform, but would limit the amount to the least possible. He thought the hot water, together with the friction, brought about the best results. We should never conduct a case without making provision for a plentiful supply of hot water.

Dr. J. A. Temple, of Toronto, thought probably the length of the labor was the cause in this case. He advised the use of whiskey or brandy as an intrauterine douche to stimulate contractions, never failing to use sufficient quantity.

The president, Dr. John Coventry, then read his annual address. (See page 391.)

Dr. T. S. Harrison, of Selkirk, moved, seconded by Dr. R. W. Bruce Smith, of Hamilton, that this association express its hearty thanks to Dr. Coventry for the excellent address which he had just given us. Carried.

The association then divided in sections.

MEDICAL SECTION.

Dr. T. S. Harrison, of Selkirk, was elected chairman, and Dr. J. W. Smuck, of Toronto, secretary of the section.

Dr. W. J. Wilson, of Toronto, presented a paper on

"PUERPERAL ECLAMPSIA."

The paper should have been called "the treatment of puerperal eclampsia." The treatment should be both prophylactic and active. If the indications were severe, pregnancy should be terminated when the child was not viable or approaching viability. If the child were viable it was probably better to temporize.

Such active measures as would eliminate the poison from the system should be used. It was not well to trust too implicitly in one remedy.

Dr. James Samson, of Windsor, said he had bled for eclampsia with excellent results, and commended that part of the paper which advised bleeding in suitable cases. He had grown less frightened of this disease than formerly. He had seen cases, he was certain, where there was nothing whatever wrong with the kidneys.

Dr. A. H. Wright, of Toronto, said he thought too much attention had been paid to the kidneys, as they were only attacked secondarily. The liver was attacked first, then the blood, nerves and kidneys. The poison collected in the bowel, and he had found nothing better than old-fashioned Epsom salts.

For the active treatment of the convulsions morphia was our best remedy in proper cases. This should be followed by chloral to prevent a recurrence.

Dr. C. J. Hastings, of Toronto, said distinction should be made between the cases due to toxæmia and the neurotic form. Bleeding was referred to, and the washing of the blood with artificial serum suggested.

The chairman said that in country practice there was a great difficulty in having patients treated before actively in labor. The doing away with bleeding was not an unmitigated blessing. The doing away with the abuses of bleeding was a good thing.

Dr. J. S. Hart, of Toronto, read a paper entitled

ABSCCESS OF THE LUNG,

The diagnosis in this case was obscure and two or three mistakes were made, then the true nature of the trouble was made apparent. The condition was never serious, and there was no operation. The patient made a good recovery.

Dr. A. McPhedran said that drainage might have done better in this case.

Dr. A. McPhedran, of Toronto, read a paper on

CEREBRAL SYPHILIS.

This was the record of two cases which he had recently treated. The treatment should be thorough and continued. The prognosis varies with length of the incubation period. The longer the incubation the worse the prognosis. Tabetic cases are the most unfavorable. The more general the symptoms the better the prognosis.

For treatment we should never leave anything undone. The iodide of potash in large doses would show improvement even when small doses fail to benefit. After giving iodide for a time it is better to change off to mercurials. The future of these cases should be kept in view and occasional periods of treatment taken. Prophylaxis was touched upon. In the early lesions of syphilis, mercurials should be given, but later iodides was the best treatment.

Dr. Harold C. Parsons, of Toronto, presented a paper on the

STUDY OF DRIED AND STAINED PREPARATIONS OF THE BLOOD.

The method of preparing the specimens of blood was carefully gone into and explained. The results of faulty technique and how to avoid these dwelt upon. The staining methods of Ehrlich and the various pathological changes found in different diseases minutely given.

Dr. James Samson, of Windsor, read a paper entitled

TWO UNNAMED DISEASES.

The title was correct as far as the association was concerned, yet with regard to the second part of the paper it was not. The speaker recited the history of some twenty-five or thirty cases of a disease which had occurred in his practice. The symptoms pointed somewhat to the "milk sickness" of the Southwestern States. They all occurred in one section of the country. There was nausea, fever, diarrhoea, etc., which pointed to poisoning, and in one or two cases which had recently occurred, there were strong suspicions placed. The results he had obtained were very good as compared with the few cases which he believed surrounding physicians had seen. There had only been one post mortem, and that imperfect. If any members had had a similar experience he would like to hear from them.

The second part of the paper dealt with the relation between idiopathic peritonitis and appendicitis. He said some cases appeared to be of rheumatic origin.

Dr. W. J. Wilson said he had seen cases of rheumatic peritonitis

where the points of tenderness had moved. These cases had got well under anti-rheumatic treatment.

Dr. H. C. Parsons asked if the first series of cases were not typhoid.

Dr. Samson said there was nothing to make him think there was typhoid.

Dr. G. Gordon said there must have been some gastro-intestinal poison.

Dr. H. B. Anderson said there were cases of peritonitis due to the infection by bacteria. With regard to rheumatic peritonitis the term must necessarily be indefinite until we know the cause of rheumatism.

Dr. J. S. Hart said he had had a series of seven cases of peritonitis at one time, whether merely a coincidence or due to infection.

Dr. W. Oldright said that influenza had sometimes taken a peritonitic form.

SURGICAL SECTION.

Dr. L. Teskey, of Toronto, read a paper on

A CASE OF GANGRENE OF THE RECTUM.

The case presented very unusual features in the beginning, until at last an inguinal colotomy had been performed with very marked relief.

Dr. G. A. Peters, of Toronto, presented a paper entitled

TRAUMATIC LESIONS OF THE SPINAL CORD,*

and showed specimens.

A paper on

CASES OF MELANCHOLIA CURED BY REMOVAL OF INTERSTITIAL FIBROMATA OF THE CERVIXUT ERI

was read by Dr. T. K. Holmes, Chatham. The writer mentioned a series of twenty-five cases of puerperal mania occurring in his practice which were cured by a correction of the condition of the cervix, and three cases of melancholia where had been found a fibroma of the cervix.

No doubt when a specialist in gynæcology is appointed to every asylum many more cures would result. In the first two cases, which occurred in the same patient some years apart, melancholia was very marked, and an examination revealed the presence of a fibroma in the wall of the cervix. When the second attack occurred

*To appear in THE PRACTITIONER.

the enucleation of a fibroma, near the site of the old tumor, was not followed by as good a result as was desirable, and a second examination revealed another in the uterine wall, which, when removed, gave a very rapid recovery.

In case III. a rapid recovery also followed the removal of a fibroma of the cervix.

Affections of the cervix and lower segment of the uterus, being more abundantly supplied with sympathetic nerves than the rest of the generative system, produce a more marked effect on the nervous and mental condition of women. Next comes the vagina.

Fibroids of the fundus, even projecting through the os, do not have the same effect as when attached to the cervical tissue.

A paper and watercolor drawing of

"EXTENSIVE SLOUGHING FOLLOWING THE USE OF 'X' RAYS."

by Dr. W. H. Harris, of Toronto, came next. This was a case where very great loss of tissue had occurred, apparently from the use of the "X" rays. Discussed by Drs. G. A. Peters, B. Spencer, H. P. H. Galloway.

A PLEA FOR THE RADICAL OPERATION FOR HERNIA AMONG THE
INSANE.*

was the title of a paper read by Dr. A. T. Hobbs, of London, and discussed by Drs. E. H. Stafford and T. K. Holmes.

THE VALUE OF ASEPTIC METHODS IN THE TREATMENT OF PUS
CAVITIES,

by Dr. A. Primrose, of Toronto, was a paper dealing with various forms of infection which might occur from without, and showed the advantages to be derived by strict adherence to antiseptic rules. Thoroughly cleanse the cavity, and then allow no infection to take place. Discussed by Drs. H. P. H. Galloway, Sylvester, J. Wishart, Goldsmith, Starr, and Holmes.

EVENING SESSION.

The discussion in surgery was the next on the programme, and Dr. George Bingham, of Toronto, opened with a paper dealing especially with the various operations for inguinal hernia. The merits and demerits of McEwen's, McBurney's, Halsted's, and Bassini's operation were explained, and shown by lantern slides on a large screen. As in the experience of every operator, children gave

*To appear in THE PRACTITIONER.

the best results, and the larger number, relatively operated upon, the less the percentage of deaths. In any event the percentage of deaths should be less than one. As to recurrences such are sure to take place, and a radical cure should never be claimed until at least one year had gone by. Femoral, umbilical, and ventral hernia were touched upon.

Dr. J. Wishart, of London, followed, and said he had been operating for some years. He began with the McBurney, but was led to abandon this on account of the large percentage of recurrences, 25 per cent. to 30 per cent. No operation seemed at the present time to be the ideal one, but Bassini's seemed to give the best results. Every operator would find, however, that cases were to be judged on their merits, and the various operations modified as the operator chose. As to sutures, silk was by no means a good material for buried sutures. Kangaroo tendon gave the best results with the speaker.

Dr. A. Primrose, of Toronto, said it was not safe to take the statistics of any one man, and very unsafe to be carried away in enthusiasm for a particular form of operation. Every specialist had good figures to show.

Dr. Bingham closed the discussion.

The order of business was then suspended to elect a Nomination Committee, so that a report could be had before adjournment.

Dr. N. A. Powell, of Toronto, spoke on

THE COTTAGE SANITARIUM TREATMENT OF PULMONARY PHTHISIS.

Experience proved beyond doubt that this plan of treatment was the best we have at the present time. The results obtained at Saranac Lake by Dr. Trudeau, where about 30 per cent. of permanent cures, and 75 per cent. materially benefited, could not be equalled by any other plan of treatment at the present time. Several lantern slides were shown of the cottages at Saranac Lake, and of the sanitarium near Gravenhurst, which will be opened in about two months. The speaker hoped the profession of Ontario would heartily support the work, and not get the mistaken notion that it was a place for our consumptives to go to die.

Dr. R. G. Rudolph, of Toronto, then read a paper on

THE EFFECT OF GRAVITY UPON THE CIRCULATION.*

Dr. E. E. King, of Toronto, gave a lantern exhibition of skiagraphic pictures, which were very much enjoyed by the members.

* This paper will appear in *THE PRACTITIONER*.

The scrutineers appointed to take the ballot for the Nominating Committee brought in their report as follows: Dr. A. H. Wright, Toronto; Dr. J. E. Graham, Toronto; Dr. A. McPhedran, Toronto; Dr. J. Bray, Chatham; Dr. A. Primrose, Toronto; Dr. T. S. Harrison, Selkirk; Dr. R. W. Bruce Smith, Hamilton; Dr. C. A. Macdonald, Toronto; Dr. T. K. Holmes, Chatham; Dr. W. Britton, Toronto; Dr. J. Mitchell, Enniskillen.

The association then adjourned until to-morrow.

SECOND DAY—THURSDAY, JUNE 3RD.

The second day opened with the usual routine business being gone through with.

Dr. W. Oldright, of Toronto, showed some pathological specimens which he had successfully removed. One of the most interesting was a dermoid cyst of the ovary.

The discussion in obstetrics brought forth a very able paper from Dr. Gilbert Gordon, of Toronto, on

ALBUMINURIA OF PREGNANCY.

The various causes of albuminuria were touched upon and treated from the standpoint of causation. Inasmuch as one attack of eclampsia seemed to render the person to some extent immune, is it not possible that some toxine is the cause? While not taking up the treatment particularly, the writer believed that better results could be obtained by paying strict attention to diet. Keep the bowels open and the skin acting freely.

Dr. W. Oldright, of Toronto, said the proper management of albuminuria depended upon the cause, and every case needed to be studied with care. It was highly important that frequent examinations of the urine should be made.

Dr. Bray, of Chatham, said albumen was not always found in the urine of eclamptic cases; it was very frequently there. It might not be found in particular instances, or at some examinations, but if frequent examinations were made it would be found in a majority of cases. Two propositions seemed to the speaker to be important: (1) All primiparæ should consult the physician at least three months before delivery; (2) frequent examinations of the urine should be made. One attack has not necessarily given immunity, although the cause may be a toxine.

Dr. H. P. Wright, of Ottawa, said he regretted not being present when the paper was read and in the earlier part of the discussion, and was therefore afraid of going over well-trodden ground. How-

ever, he had treated three cases of eclampsia within the past year, with two recoveries. He had bled freely in both cases. Morphia and atropia had been used, and he considered that probably no better drug was available than morphia in properly selected cases. This must, of course, be followed by sedatives, as chloral. Attention must be paid to excretory functions.

Dr. T. K. Holmes, of Chatham, said Bouchard found several toxins in the blood, and our treatment should be directed against the particular toxine which the symptoms of the attack pointed to. Immunity may occur in some cases, but he did not think his experience warranted that conclusion. After all, treatment was the most important. In suspected cases the urine should be examined every two or three days. Would not use morphia in all cases. Diaphoresis, a very important factor, must be attended to. Careful diet; milk diet if a severe case. Two years ago the speaker reported forty-three cases, in nine of which he had induced labor with excellent results.

Dr. Barrick, of Toronto, said in his student days he had been taught to examine the urine, and his experience had taught him that when the percentage of albumen increased gradually, to never hesitate to empty the uterus, especially if the percentage gets at all high. He could endorse what Dr. Oldright had said with regard to heart failure being sometimes seen.

Dr. Gordon closed the discussion.

The association then divided into sections.

MEDICAL SECTION.

Dr. E. E. Harvey, of Norwich, read a paper on

SOME CONSIDERATIONS ON THE MANAGEMENT OF PREGNANCY.*

HYDROTHERAPY OF THE SKIN IN EARLY PHTHISIS,

was a paper read by Dr. Edward Playter, of Ottawa. The writer made a plea for the systematic attention to the function of the skin, and said the water was often neglected in this connection.

A paper on

THE TREATMENT OF GASTRO-INTESTINAL CATARRH IN INFANTS,*

by Dr. H. D. Livingston, of Rockwood, was next read.

A paper on

PNEUMOCOCCUS INFECTION

was read by Dr. H. B. Anderson, of Toronto. A case was reported where the lesion was found in the appendix and in the heart. The

* Will appear in the CANADIAN PRACTITIONER.

mode of entrance was frequently through the intestinal canal, and the virulence seemed to depend largely upon the resistance of the individual. The germ should not be called the pneumococcus, as the lesion was not always that of pneumonia, as the name would lead one to believe.

A paper was read by Dr. H. J. Hamilton, of Toronto, on

HYPERCHLORHYDRIA,*

and another by Dr. Price-Brown, of Toronto, on

INTRA-LARYNGEAL MYCOSIS.

The following papers were read by title: "The Treatment of Puerperal Eclampsia," by Dr. A. R. Hawks, of Blenheim.

"Tuberculosis of the Liver," by Dr. R. W. Whiteman, of Shakespeare.

"The Injurious Effects of our Overwrought School System on the Health of Public and High School Pupils," by Dr. R. Ferguson, of London.

"Septicæmia a Preventable Complication of Labor," by Dr. Charles J. C. O. Hastings, of Toronto.

"Pain and Some of its Aspects," by Dr. Campbell Meyers, of Toronto.

"Hæmorrhagic Pancreatitis," by Dr. E. B. Shuttleworth, of Toronto.

SURGICAL SECTION.

A paper on

NOTES OF SOME PECULIAR PHASES OF APPENDICITIS,*

was read by Dr. J. F. W. Ross, of Toronto, and was followed by

CYSTIC TUMORS OF THE OVARY COMPLICATING PREGNANCY
AND THE PUERPERAL STATE,

by Dr. H. Meek, of London.

Case I. Was the history of a patient seen in Mr. Lawson Tait's Hospital in Birmingham, where a suppurating dermoid cyst had interfered with labor, and in about three months removed. Patient died in thirty-six hours.

Case II. The pregnancy and labor had been normal for the first child, but eight months previous to operation second pregnancy had been attended with difficulty, and the attending physician had aspirated a fluctuating mass which retarded the descent of the head. Recovery was very slow: patient able to get up after a time; she had to

* Will appear in THE PRACTITIONER.

go to bed again. At the time of operating a large mass with very little fluctuation was felt behind the uterus. This was opened and cleared of pus, faecal in character, and of light-colored hairs. It was curretted and thoroughly cleansed; swabbed with iodine, and drained. Under this treatment the cavity gradually contracted and the patient improved nicely.

Case III. was that of an unmarried woman, who presented a double tumor, one in the right side, which appeared to be ovarian, and the two month pregnant uterus in the left. Operation revealed this to be the case, and the tumor was removed through the abdomen without interrupting the pregnancy.

Contrast is made between the cases not seen until labor occurred and where seen early in pregnancy. The cause of the trouble was removed and allowed an uneventful recovery. Every pregnant woman should be carefully examined, so as to be certain no unfavorable condition was present which would interfere with labor.

THE LUNCHEON.

The association adjourned to the R.C.Y.C.'s comfortable club house for luncheon, which the Toronto members served to the visiting members. After the usual toasts were responded to, and everyone seemed to feel the hospitality had been ample, Mr. A. E. Gooderham's steam yacht *Cleopatra* was in waiting, and members enjoyed an hour's sail on Lake Ontario. The Toronto street railway supplied cars to convey us to the General Hospital, where Dr. O'Reilly showed the visitors more especially, the various appliances, the wards, etc., of the hospital.

Dr. J. E. Graham showed an interesting case of Hodgkin's disease.

Dr. I. H. Cameron showed a case which he had operated on for abscess of the lung.

Dr. L. Teskey showed a boy upon whom he had operated for, 1st, abscess of the liver; 2nd, inguinal hernia; 3rd, phimosis.

Dr. G. A. Peters showed a case of suppuration of the knee-joint upon which he had operated.

Dr. A. McPhedran showed a case of abscess of the lung which had been drained.

Dr. A. Primrose showed a case of skin-grafting after the Thiersch method.

EVENING SESSION.

At the evening session on Thursday the business of the association was concluded. The Committee on Nominations brought in their

report, which was as follows : For president, Dr. W. Britton, Toronto ; first vice-president, Dr. Jas. Samson, Windsor ; second vice-president, Dr. H. P. Wright, Ottawa ; third vice-president, Dr. J. Wishart, London ; fourth vice-president, Dr. J. Mitchell, Enniskillen ; general secretary, Dr. J. N. E. Brown, Toronto ; assistant secretary, Dr. E. H. Stafford, Toronto ; treasurer, Dr. Geo. H. Carveth Toronto.

Dr. Barrick, of Toronto, presented the report of the Committee on Legislation, in which it was urged that :

(1) The Legislature appoint a committee to supervise the publication of the various quack remedies so widely advertised in our secular press.

(2) That county health officers be appointed instead of the township officers as now in vogue.

In moving the adoption of the report, Dr. Barrick said that it was a shame poor *sick* people were allowed to be so gulled by the various nostrum vendors, by their lying advertisements. People who were well and able to properly take care of themselves were guarded by health officers at almost every point, but as soon as he took sick and thereby unable to properly weigh the evidence produced, he was left to be preyed upon by every quack who could write a plausible advertisement.

In the second part of the report he thought the committee was justified in bringing it in for the reason that the Provincial Board of Health were moving in that direction, and much more efficient work could be done.

Dr. N. A. Powell thought no demand had arisen for county health officers, and hasty action might prove detrimental. The present system gave a medical man at the very beck of any township council for advice, etc. It would entail hardship if a distance had to be travelled, and prompt action could not as readily be taken.

Dr. J. W. Smuck said that as a township health officer he found great difficulty in doing any efficient work. General practice was our daily duty. There was not sufficient remuneration given for the work, and most people thought it was paying \$15 or \$20 per annum for nothing. County officers who could devote their whole time to the work could give laboratory facilities, a depot for antitoxin, etc., and would collect valuable data in time with regard to morbidity and morbility, the supply of water, disposal of drainage, etc., and the effect of soil, elevation, on the health of the community, and so on, which would be very valuable.

The president said, speaking as one who knew the mind of the Provincial Board of Health, he could say they were nearly a unit in supporting the scheme. Township officers might recommend suitable plans for drainage, etc., but they could not be carried out for no good would accrue unless adjoining townships co-operated. The report was then adopted.

The Committee on Necrology had to report the death of the following members : Dr. D. Bergin, M.P., of Cornwall ; Dr. F. Rae, of Oshawa ; Dr. W. T. Aikins, of Toronto ; Dr. W. T. Harris, of Brantford ; Dr. J. W. Roseburgh, of Hamilton ; Dr. J. B. Baldwin, of Toronto ; Dr. M. J. Donovan, of Toronto ; Dr. Ridley, of Hamilton ; Dr. McCargow, of Hamilton ; Dr. R. Gowland, of Hamilton.

The auditors' and treasurer's reports were adopted.

Dr. Machell, of Toronto, introduced the question of the establishment of the

VICTORIAN ORDER OF NURSES.

by the following resolution : "That in the opinion of the Ontario Medical Association the proposal to found a Victorian Order of Nurses is an unnecessary and impracticable scheme."

A discussion on this scheme, which was inaugurated by Lady Aberdeen, was at once begun. Every member of the association who spoke made it clear that, in his opinion, the motives which had suggested the proposal were most admirable, but the opinion was freely expressed, that the whole scheme was utterly impracticable.

Dr. Machell said that it would be the means of doing untold harm to the people of Ontario—in fact, to the whole Canadian public. He argued that if half-trained nurses, such as he implied would be employed, were sent out into the sparsely-settled districts there would be a vast increase of deaths from various illnesses. He especially instanced the evils which would follow from the attendance of such nurses on cases of child-birth. He pointed out that the medical statistics of England showed that the rate of death in midwifery was doubled through the employment of incompetent nurses, and he predicted that the same results would follow here on the establishment of an order of nurses such as the one proposed, where every particular in connection with the scheme was so crude and ill-digested.

Dr. Fotheringham pointed out, that certain clauses of the official pamphlet advocating the scheme were a direct insult to the medical profession in that they intimated that the rural doctors of this province were derelict in their duty, and that more men of the Dr. McClure stamp were needed. He considered that the rural physicians

were intensely solicitous in the discharge of their duties, and the expressions used were most gratuitously insulting to this branch of the profession. He quoted from the pamphlet to show the leading features of the proposed scheme.

Dr. Mitchell asserted that to his knowledge no physician had ever refused to attend a patient—especially a midwifery patient—when called upon, and intimated that the expressions employed in the circular were an outrage on the profession.

It was suggested that the association, in giving expression to its views on this matter, should do so in a very deliberate manner, and give reasons for opposing the scheme for the founding of an order on the lines laid down in the pamphlet.

This was agreed to, and a committee, consisting of Drs. Machell, Fotheringham, Mitchell, McPhedran, and C. J. Hastings, appointed which brought in the following resolution: "After careful consideration of the scheme for the founding of a Victorian Order of Nurses so far as its details have been made public, the Ontario Medical Association desires to express its full appreciation of the kindly motives which have prompted the movement, but feels that it would be neglecting a serious public duty if it failed to express its most unqualified disapproval of the scheme, on account of the dangers which must necessarily follow to the public should such an order be established."

The resolution was unanimously carried.

Votes of thanks were then passed to the officers of last year, and to various institutions for courtesy shown to the association.

The next meeting will be held in Toronto. J. W. S.

TORONTO MEDICAL SOCIETY.

THE regular meeting of the society was held on the 13th May, 1897, in the council building. Dr. W. J. Wilson occupied the chair.

Dr. McMahon gave notes of a case in practice. On the 16th of April he was called to see a child a year and a half old. The patient was dull and sleepy, complained of no pain, and had a temperature of 103.2. There was slight enlargement of the glands of the neck. The throat was congested and slightly ulcerated. The temperature was 104.2 the next day. There was a slight rash on parts of the body. Scarlet fever was suspected. Next day the temperature was 105.2. There was slight tenderness over the

mastoid cells on the right side. Next morning the temperature was 105. Tenderness in the right mastoid area was marked. Poultices were ordered and the injections of warm water. The following day a slight discharge appeared with improvement of symptoms. In a short time the child was able to run around, although the ear was still discharging. In the meantime the ear was being cleansed and insufflated with dry boracic acid. Some days after the Dr. was hastily summoned to see the child. It was suffering from convulsions. These were controlled by chloroform, bromide and chloral. The left leg and arm were paralyzed; but the convulsions seemed to affect the right side. The eyes were turned to the right; the pupils were about equal in size but did not respond to light. There was distinct swelling over the mastoid process on the right side. Dr. Reeve, who was called in, made an incision over the tumor and evacuated some pus. From this time there was no further running from the ear. The case, the speaker said, impressed on one the necessity of looking after these cases of otitis very closely. And one should always be on the look-out for ear trouble where there was a somnolent condition of the patient and a high temperature with absence of other symptoms.

In reply to question he said that the convulsions were not spastic.

Dr. Peters said that it was often difficult to tell what the condition was in these cases of convulsions. It would appear that the case reported was not one of purulent meningitis or it would not have recovered. However, some of the symptoms pointed to that condition. In these cases it was important to note which part of the body was affected first. If the convulsive movements began in the leg and spread to the arm and face the indication was that there was an abscess of the temporo-sphenoidal lobe pressing against the internal capsule. There could hardly have been in the case reported thrombosis of the lateral sinus; for there would have been more permanent symptoms. In young children it had been observed that abscess of the brain had drained itself through the tegmen tympani. An unusual phenomenon was the occurrence of the convulsions on the left side and paralysis on the right; but it was known how readily in children affections of one part of the brain spread to the other. In a case he had seen in an adult man there was great pain preceding the discharge from the ear. The patient became delirious and had a good deal of stupor. There was much rigidity of the muscles. The condition simulated opisthotonos. An opening was made in the usual site behind the ear

and pus exuded in large quantities. It was seen at the post-mortem that the abscess had ruptured into the sylvian fissure, and there was a purulent condition of the meninges over that portion of the brain. There was also disintegration of the brain in the neighborhood of the abscess.

Dr. H. B. Anderson said that his observation of certain post-mortem cases agreed with Dr. MacMahon's contention that medical men should be most careful in examining for middle ear trouble, not only in young children but in adults as well. Dr. Anderson reported a number of cases. He had found abscess of the cerebellum, abscess in the temporo-sphenoidal lobe, thrombosis of the lateral sinus, and meningitis with general septicæmia, and other serious brain lesions connected with middle ear disease.

Dr. R. A. Reeve said that cerebral abscess occurred rarely in acute otitis. It was not considered to be present in the case he had seen with the essayist. There had been an acute otitis with a certain amount of discharge. The pus seemed to have forced its way through the dehiscence in the roof of the tympanum, and formed an extradural abscess. This would cause a certain amount of pressure. Cutting through the periosteum over the mastoid antrum gave vent to the pus. It was quite true what one observer had said of otitis when it once becomes established, that one can never tell when, where, and how it will end.

Dr. J. Hunter expressed opinion that some of the convulsive and paralytic symptoms may have arisen from the toxic condition.

Dr. N. A. Powell spoke of the value of infiltration anæsthesia. He then presented some pathological specimens. The first was a penis he had removed for carcinomatous disease. The organ was surrounded by a large ulcerating mass, which had been treated by a physician for two years. He described the technique of the operation. The second was a growth he had removed from the vagina. In situ it appeared to be lipomatous, but examination after removal led him to think it was fibromatous. A microscopical section had not been made yet. He also presented a number of glands he had removed from the neck of a girl aged fifteen. They had shelled out quite easily. He took them to be tuberculous, as the patient had evidences of tuberculous change going on in the lungs.

Dr. Peters, Dr. Primrose, and Dr. Britton discussed the case.

Dr. Stark gave the history of a case of tubercular meningitis. Dr. H. B. Anderson gave the post-mortem report and presented the brain for examination, which showed well-marked miliary deposits. The primary disease was in the tracheal lymphatic glands. There

was also a caseous focus in the upper lobe of the right lung. He was also able to demonstrate the vessel into which this caseous mass had ruptured, producing the general distribution of the bacilli.

Dr. H. H. Oldright presented a tape worm showing the head. It had been evacuated after the administration of male fern.

The society then adjourned.

PATHOLOGICAL SOCIETY.

REGULAR meeting was held in the Biological Building at 8.30 p.m., April 24, 1897. President in the chair.

Members present, J. Caven, H. B. Anderson, R. B. Nevitt, W. Oldright, H. H. Oldright, J. J. McKenzie, F. N. G. Starr.

H. C. Parsons and L. M. Sweetnam, candidates for membership. Visitors—W. Goldie, C. L. Starr, McCrae.

H. C. Parsons read a paper on leucocytosis.

L. M. Sweetnam read a paper on parovarian cysts.

J. Caven presented hearts and kidneys prepared by Kaiserling's method.

F. N. G. Starr presented specimens of lung, heart, and liver of monkeys prepared by Fore's method.

H. H. Oldright showed concretions from the ear and disorganized finger-joint.

Candidates were nominated for the several offices.

The annual meeting was held in the Biological Building at 8.30 p.m., May 29, 1897, the president in the chair.

Members present, J. Caven, H. B. Anderson, J. E. Graham, J. J. McKenzie, J. T. Fotheringham, F. N. G. Starr, and H. J. Hamilton.

Minutes of last meeting read and adopted.

Proposed for membership, Dr. W. J. McCollum, proposed by H. B. Anderson and J. E. Graham.

J. T. Fotheringham presented a case of

MALIGNANT PLEURISY, GROSS AND MICROSCOPICAL SPECIMENS.

Clinical Notes.—A.M., æt. 56, admitted to St. Michael's Hospital end of October last, and inmate till death five months later. During first third of that time case looked like an ordinary case of chronic pleurisy with effusion. The right chest cavity was distended, and the walls bulging and motionless. Aspiration was neces-

sary three times for relief of dyspnœa, first time one week after admission, 56 ounces; then in two weeks again, 80 ounces; and again in six days, 81 ounces, with fine stream still running. Fluid faintly ruddy, straw-colored, translucent, fibrinous, very little blood in it. From this time the clinical aspect of case quite changed, and from being the full bulging chest of effusion it became the contracting, collapsed chest of fibroid phthisis—the removal of the effusion scarcely improved the position of the heart at all, which was very much misplaced, apex lying almost in left anterior axillary line, and about one inch too low. Coincidentally with the beginning of the general change in the aspect of the case, there came at the site of the punctures in the right axilla a small nodule which appeared about two weeks after the last aspiration. This grew to the size of a large walnut before death, and caused a rapid enlargement of the anterior chain of axillary glands, as well as an infection across the base of the axilla, of a few glands in the ninth intercostal space below angle of scapula. Death was due to asthenia, and was preceded by a little mild delirium, though he died sitting in his chair. There was no pain in the thorax throughout his illness. Temperature ran an average course of 99.2° F. or so, never over 100° F., and seldom up to that. Pulse 75 to 100. Respiration 20 to 38.

Post Mortem Findings.—Apart from the discovery of an unsuspected calculus in one kidney and the displacement of the liver, the only findings of interest were in the thorax.

The liver was found displaced downwards three and a-half inches, and to the left so as to touch ribs of left side; the left lobe could be felt during life, but the right lobe could not be found to be displaced at all, which was a very puzzling matter, but was fully explained by the discovery that the transverse colon lay between the liver and the abdominal wall, forming a well-marked groove in the anterior surface of the right lobe and discoloring it to a dark bluish green.

On the upper surface of the liver, to the right of the suspensory ligament, was a chain of about twenty nodules, under Glisson's capsule, whitish, shape and size of a split pea, corresponding to a similar but more extensive nodulation of the dome of the diaphragm which was adherent to the new growth in the thorax. This is interesting as an example of the contagiousness of malignant growths without the intervention of adhesions.

The left lung was large, voluminous, overlapping the normal area of heart dullness almost entirely.

The right lung was compressed to about a quarter its normal

size, deeply pigmented, stained, and carnified. It was incased in a cuirass of tough tuberculated whitish thickened pleura, the seat of the malignant growth. The parietal pleura was nearly normal, through dense adhesion had occurred between the visceral pleura, and the site of puncture with its nodule already mentioned. The specimen shows (1) the sixth and seventh ribs, (2) the nodule to the outer side, (3) and the adherent pleura, new growth and compressed lung, to the inner side. There was no evidence of mediastinal growth, no enlarged glands there, and the whole of the evidence is in favor of the diagnosis of primary endothelioma of the pleura. The microscopic sections show a greatly thickened pleura, mainly fibrous, or scirrhus, with here and there, especially in the outer layers, a long slit-like lymph space filled with the new growth, the cells of which cannot be distinguished from those of an ordinary carcinoma. In the deeper layers the cell masses are more circular, and more numerous, while in many of these groups the cells are very much larger. This, I think, may be taken to show the direction of the growth, malignancy increasing inwards instead of outwards, which, I think, is what one would expect from a primary endothelioma of the lymph spaces of the pleura.

This condition is rare. The bibliography of it is, I think, limited. In Ziemssen's *Clycopædia* the article on disease of the pleura is by Fraentzel, who says, under the head of malignant new growths in the pleura, that "sarcomas, or cancers of the pleura, are never primary," but due to extension from neighboring organs. This view is certainly not now held. Delafield and Prudden say that while carcinomata, sarcomata, and lymphomata in the pleura are usually secondary, a peculiar form of primary new growth has been described, and they mention the names of Fraenkel, Thierfelden, E. Wagner, and others in support of their view. Delafield then gives short notes of two cases he had himself seen and studied, corresponding very closely to this case of mine. His description of the microscopic findings might apply almost without change to this case, and he goes on to say that "it is very difficult to class these tumors; whether to call them by the name of carcinoma, sarcoma, or epithelioma it is not easy to say." Elsewhere, however, he uses the terms endothelioma and endothelial sarcoma as convertible, and this would appear at first sight to be a surrender of the old distinction that sarcomata are always connective tissue or mesoblastic in origin, and carcinomata epi, or hypoblastic. One would need at this juncture to furbish up his embryology. The most recent view, so far as I am aware, is that while the endothelium of the blood

and lymph vessels is mesoblastic, that of the three great body cavities, pleural, pericardial, and peritoneal, though structurally similar, is genetically distinct, and is of hypo-blastic origin. The older view that the primitive body cavity is at first a lymph space in the layers of the mesoblast is not now universally held, as some say that it is originally an outgrowth from the alimentary canal and therefore hypo-blastic. This would mean of course that a new growth primary in any one of these three membranes would be epithelial, or carcinomatous, if it originated on the surface of the membrane, while if it began on the deeper lymph spaces of the membrane it might possibly still be correct to call it a sarcoma.

J. Caven presented several hearts, two of general hypertrophy, and one of malignant endocarditis.

H. B. Anderson presented (1) intracapsular fracture of the femur, and the bladder, with enlarged prostate from the same case; (2) a heart, which was of special interest (will be reported at a later date).

The election of officers was then proceeded with, and resulted as follows: President, H. B. Anderson; vice-president, A. Primrose. Councillors—J. Amyot, J. J. McKenzie, H. C. Parsons.

Meeting then adjourned.

TORONTO CLINICAL SOCIETY.

THE regular meeting of the Clinical Society was held on the 12th May. President Allen Baines occupied the chair. Dr. Harold Parsons was elected a member of the society.

PRIMARY CARCINOMA OF THE GALL-BLADDER.

A specimen of cancer of the gall-bladder was presented. Dr. J. A. Temple gave a brief clinical history of the case. The patient was a woman, aged 65, who had always been healthy. Four of her immediate relatives had died of cancer. The tumor was found on the right side, a little below the liver. It was freely movable and smooth in outline. There was no history of gallstones nor jaundice. The tumor could be pushed back into the line of the kidney, and there was a clear marked line of tympany separating it from the liver. So it was thought to be a tumor connected with the kidney. Dr. Cameron, who saw the case, had concurred with this diagnosis. Coeliotomy revealed the true nature of the case—a

cancer of the gall-bladder. The patient lived twelve days after the operation, simply sinking from rapid growth of the disease.

Dr. H. B. Anderson reported on the principal post-mortem features of the disease. A large mass was found over the right of the gall-bladder. It was soft, almost brain-like in consistence. In the centre of the mass was a large number of gallstones. There were several secondary growths throughout the liver; these would break down on the slightest pressure. The growth had all the characteristics of an encephaloid cancer. Cases of primary cancer of the gall-bladder were nearly always associated with gallstones.

In reply to question, Dr. Temple said the history of the case only extended over six weeks.

Dr. Strange thought the cancer was responsible for the gallstones, instead of *vice versa*.

HÆMORRHAGIC PANCREATITIS. I

Dr. E. B. Shuttleworth reported on a post-mortem he had made in a case of the above disease. The patient was a very fat man, weighing probably 250 pounds, who had taken ill three weeks before his death with symptoms of diarrhoea and vomiting. He became delirious. He thought people were persecuting him. A doctor was called, who ordered a sedative mixture. The patient died very suddenly from symptoms of collapse. The most noticeable thing on opening the peritoneal cavity was that the fat was studded with small white growths. The spleen was congested. The pancreas was enlarged and dark in color, almost black.

Dr. Anderson said that the specimen shewn showed a typical case of hæmorrhagic pancreatitis with disseminated fat necrosis. In cases of pancreatitis fat necrosis was a common accompaniment. One observer had attributed fat necrosis to disturbance in the normal secretion of the pancreas. Hildebrand to ascertain the relation between these two conditions had put a ligature around the splenic end of the pancreas to prevent the escape of the secretion, and found disseminated fat necrosis followed. Afterward he not only put a ligature around the pancreas, but also around the vessels so as to prevent the return of the secretion; disseminated fat necrosis followed. Another investigator had injected pancreatin into the peritoneal cavity of animals, and found that fat necrosis followed. Hildebrand had sutured a piece of pancreas to the omentum of a cat, and got a similar result. He injected trypsin into the peritoneal cavity, but found that it did not produce the necrosis, so he had concluded that the necrosis was not the result of the action of the ordinary

digestive ferments of the pancreas. Stockton had reported two cases in which there was marked disseminated fat necrosis, where the affection of the pancreas was slight. This observer thought the condition of the pancreas was secondary to the fat necrosis. Osler says that such cases usually occur in alcoholics, and that there is no necessary relationship between the two conditions. One case he had reported had been operated on for intestinal obstruction. The patient afterward recovered. The youngest patient in whom this condition had been found was one under the care of Dr. McPhedran, a boy aged nine months, who had died from the disease. The patient had had symptoms of intussusception, and had been operated on for its relief. Post-mortem, the pancreatic disease had been noted. Constipation was usually a marked symptom.

Dr. Peters, who had operated on the case last referred to, said he was under the impression diarrhoea was one of the prominent symptoms. The child had suffered intense pain. There was no tumor.

TUBERCULAR KIDNEY.

Dr. F. Strange reported the history of a case. The patient was a woman aged thirty, with a good family history. She had always been in good health, except that for the past three or four years she had suffered from muscular rheumatism to some extent. The only symptom she had was a constant and distressing desire to urinate. The urine showed the presence of a few pus cells and a corresponding amount of albumen. She failed rapidly. After some weeks an enlargement was noticed in the right renal region. On consultation it was decided to remove the kidney. It was removed in the ordinary way by the lumbar incision. The patient died a few hours after the operation from shock.

Dr. Primrose gave the post-mortem report.

The kidney was very friable. The tubercles could be plainly seen on the surface. On section of the kidney one could see in the cortex and along the line of the tubules the tubercular process going on. The ureter was markedly fibrotic.

Dr. Bingham said that he had found the presence of blood in the urine a common symptom in these cases.

Dr. Garratt reported a case in which mental excitement would produce hæmorrhages from the kidney. Dr. Anderson had discovered the bacilli in the urine. Dr. Loomis, who had seen the case in 1892, had made a diagnosis of sub-acute Bright's disease.

Dr. Peters said that the thickened ureter reminded one of the thickened vas in tubercular disease of the testis. Dr. Beck had

called attention to the symptom of frequent micturition as a marked symptom in tubercular disease of the kidney. An interesting feature in the case reported was the complete absence of any hereditary taint. This went to prove the infectiousness of the disease.

Dr. A. A. Macdonald reported a case in which the only sign was enlargement of the kidney. There was neither blood nor pus in the urine at first. After patient had been examined under chloroform the presence of both was detected. In this case there were no bladder symptoms. Subsequently the kidney was removed. There was no thickening of the ureter. A good recovery followed. In a few cases he had followed there was no hereditary tendency. The cystoscope was useful in enabling one to exclude disease of the bladder. The ureteral catheter might be of service in ascertaining the condition of the kidney.

Dr. Primrose spoke of the importance of using the guaiacum and ether test to ascertain if there was blood in the urine.

ENDOCARDITIS AND APPENDICITIS.

Dr. G. Bingham reported the case of a man, aged 37, who was taken suddenly ill after he had partaken of a hearty meal. He suffered great pain in the abdominal region. This was relieved by hot applications. When the patient presented himself to the doctor the temperature was 102, pulse 120. The general appearance was bad. The man was ordered to bed. An endocardial murmur could be heard. He suffered from nausea and was very restless. Dr. Graham, who was called in consultation, advised that cultures be made of the blood. Before report was made death took place. The pneumococcus was found in large numbers in the blood. On opening the abdomen the appendix was found containing a small amount of pus. Its wall was not thickened, nor was it surrounded by any inflammatory adhesions. A nodule was found on the aortic valve.

Dr. Baines introduced Dr. A. A. Macdonald, the president elect, who thanked the society for appointing him as president for the coming year.

The society then adjourned.

THIRTY-SEVENTH ANNUAL MEDICAL REPORT OF THE BOYS' HOME, TORONTO.

BY JAMES THORBURN, M.D., CONSULTING PHYSICIAN.

During the past year the home has been visited by no fewer than three epidemics. The first was scarlet fever, which broke out among the inmates early in October. Thirty-one boys were attacked by this disease, of whom twenty-one were sent to the Isolation Hospital, and ten cared for by ourselves. The second epidemic, mumps, appeared in December, attacking twenty-four boys. These boys were kept at home. The third epidemic was chicken pox, which appeared early in January, attacking some ten boys, who were also sent to the Infirmary. It affords me much pleasure to say that there were no deaths among these boys. Early in the season one little boy succumbed to disease of the heart, this being the only case of death recorded during the year.

I think it might be of interest to give a *resumé* of the history of the institution in regard to diseases since its establishment in 1859. Since then 2,338 boys have been admitted. In 1862 we had epidemics of whooping-cough, scarlet fever, and measles, and two deaths occurred; in 1867 we had one death from consumption; in each of the years 1868, 1869, and 1870, we had one death; in 1871 we had epidemics of measles and typhoid fever, and lost one boy; in 1872 measles and scarlet fever prevailed, and in that year we lost one boy from tuberculosis; in 1880 quite a number of boys were attacked with croup and ulcerated throat, and one died. In 1881 there was a great deal of illness—principally measles and whooping-cough; we escaped, however, without any deaths; in 1882 we had measles, whooping-cough, and mumps; in 1883 one death occurred, and in that year we had mumps and inflammation of the respiratory tract, accompanied by a contagious ophthalmia; in 1886 some thirty-five boys suffered from enuresis, and there were two deaths that year; in 1887 a very troublesome scalp disease (*tinea tonsurans*) spread among the boys; in 1888 la grippe and

measles prevailed, and in that year the home met with a loss which we all very much felt, namely, the death of Mrs. Munro, our excellent matron ; in 1889 we had one death, and in that year we had also measles, mumps, and la grippe, and two cases of diphtheria ; in 1890 we had measles and catarrh, with one death ; in 1893 we had one death ; in 1895 measles, chicken-pox, and ringworm were prevalent, and one death occurred.

You will remember I stated at the beginning of this report that since its founding no fewer than 2,338 boys have received the care and protection of this home. This alone should be a source of much gratification ; but the fact that out of that large number—many of them poor and wretched, pale and emaciated, half-starved and vicious in habits, and dirty in body when admitted—we have had no more than nineteen deaths should be still more gratifying, and is truly a remarkable experience.

I regret to say that on Thanksgiving Day our attending physician, Dr. Elliott, received an injury by falling from his horse, so that since then I have had the whole attendance.

You will pardon me if I allude to a personal matter—I still have the greatest regard for the home and all connected with it, and feel the same interest that I did when I first became an official of it at its inception in 1859. I feel, however, that I cannot devote that close attention to it that I formerly did. Increasing years makes it a matter of anxious labor, and I think it would be advisable that a second acting-physician be appointed, especially one residing near the institution, who might be able to act in case from any cause the ordinary physician could not be procured, and I would suggest the name of Dr. Wm. J. McCollum, 166 Jarvis street, for that position.

Book Reviews.

TRANSACTIONS OF THE CANADIAN MEDICAL ASSOCIATION. Twenty-ninth Annual Meeting held at Montreal, August 26th, 27th, 28th, 1896. The *Gazette* Printing Company, Montreal.

At the last meeting of the Canadian Medical Association, it was decided to publish the transactions, and the work was left in the hands of the publishing committee. While we are glad to congratulate the committee on the results of their efforts we desire to refer especially to the untiring zeal of Dr. Blackader, who did the lion's share of the work in producing this volume. It is only fair to state that he received much assistance from the secretary, Dr. Starr.

LECTURES ON THE TREATMENT OF FIBROID TUMORS OF THE UTERUS, MEDICAL, ELECTRICAL, AND SURGICAL. By Franklin H. Martin, M.D., Professor of Gynæcology Post-Graduate Medical School of Chicago, etc. 174 pages. The W. T. Keener Co., publishers, Chicago, Ill., 1897.

As the author states in his preface the object of the work is to place in permanent shape the outcome of the past decade of work along these lines. The work consists of the reports of ten lectures delivered at the Chicago Post-Graduate Medical College.

In the first chapters the author deals with the causation, frequency, and diagnosis of the condition, but as the purport of the work is more especially treatment this part is not elaborated.

In discussing the treatment he divides it into three parts, medical, electrical, and surgical ; and in studying the various treatments given, I would think that the work was intended more especially for the general practitioner, who is forced to do a great deal of work along this line before the gynæcologist first sees the sufferer. Although this may be true, the field of the specialist is not left untouched. It seems to me that too many of the writers on special subjects devote their energies to a compilation of the work of others and leave too little impress of their individuality on their work ; but in the work before us Dr. Martin has taken care to give the results of his own experience particularly, while not neglecting to notice the work of others.

Taken altogether, the work will, no doubt, fill the place intended for it.

DISORDERS OF DIGESTION IN INFANCY AND CHILDHOOD. By W. Salton Fenwick, M.D., B.S., London, member of the Royal College of Physicians, physician to out-patients at the Evelina Hospital for Sick Children: H. K. Lewis, London. Pp. 377, demy 8 vo. 6s.

There is no lack of text-books on diseases of children, and in all much attention is paid to the subject of infant feeding and to the derangements of digestion, which are of so frequent occurrence during the infant period. The volume before us is devoted entirely to the consideration of these subjects and, as might be expected, they are more elaborately treated than in the general works on diseases of children.

The author has had wide experience, having studied 5,000 cases of dyspepsia in children at the Evelina Hospital. This work was supplemented by pathological work in the laboratories of the Royal College of Physicians and Surgeons.

The opening chapters deal with the anatomy and physiology of the stomach in the young infant. The author points out that in the first six months the solitary glands in the stomach are small and ill-defined. After this period, however, they undergo rapid development, until about the age of ten years five or six are found in every sq. centimeter. After this they gradually lessen, so that after forty years they are almost gone. Another anatomical fact made prominent is that the muscular tone of the stomach does not attain its full degree of development until about the tenth month.

The physiology of stomach digestion in the infant has been carefully studied. It was found that in infants fed on farinaceous foods the total acidity is invariably diminished to as much as one-half. The same children, when fed with milk exhibited the normal hydrochloric acid secretion. Objection is taken to the statement that the stomach in the infant is merely a reservoir. Excess of free hydrochloric acid is seldom observed, and as a result bacteria are more likely to flourish. This probably explains the extreme frequency of gastro-intestinal infection in the young.

Concerning micro-organisms the author quotes Van Puteren, who found that in artificially fed infants there were about twenty times as many bacteria as in breast-fed children.

Chapter II. is devoted to diet. Breast-feeding is first considered; variations in quality and quantity of the mother's milk are described. Many conditions affect harmfully the mammary secretion. Most complete rules for nursing are given and the importance of feeding at regular intervals is urged. The author opposes strongly the adoption of artificial food, and would exhaust every expedient to adapt the milk to the child's digestion before making a change.

Artificial feeding follows next, and here the author is quite in harmony with Rotch, Holt, and other authorities on the subject, in ignoring completely the many patent foods in favor of cow's milk received while fresh and modified so that it closely resembles the mother's milk. The care of the animals, cleanliness, and attention to sanitation, which is seen

in dairies where milk is specially prepared for infants in some parts of the continent, and America is highly commended.

Complete directions are given for the preparation of the child's milk, also rules for feeding. Chapter III. deals with the dyspeptic conditions of infancy, *e.g.*, vomiting, simple diarrhoea, colic, etc. In one hundred consecutive cases of dyspepsia in infants under twelve months, nine only were fed exclusively upon the breast. The great cause of dyspepsia in young infants is the use of farinaceous foods, or of improperly prepared or objectionable cow's milk.

In the following chapter acute gastric catarrh is discussed under three headings—inflammatory diarrhoea, zymotic diarrhoea, and cholera infantum. Regarding causation the author has nothing new to offer. In treatment, recognizing the bacterial and irritant factors in production of the disease, purgatives and antiseptics are recommended. The author has a good word to say for lavage and irrigation.

The fifth chapter, of more than one hundred pages, is devoted to chronic gastro-intestinal catarrh. The subject is divided into chronic vomiting, infantile marasmus, atrophy, athrepsia.

The remaining chapters are given to "Ulceration of the Stomach," "Weak Digestion," and "Paroxysmal Attacks of Hyperacidity, with Headache and Vomiting."

While there may not be much that is novel in the book, yet it is in accord with the latest physiology and clinical teaching, and cannot fail to give much satisfaction to seekers for information concerning the many derangements which the author has included under the comprehensive title of "Disorders of Digestion in Infancy and Childhood."

The following book has been received for review :

MANUAL OF STATIC ELECTRICITY IN X-RAY AND THERAPEUTIC USES. By S. H. Monell, M.D., founder and chief instructor of the Brooklyn Post-Graduate School of Clinical Electro-Therapeutics and Roentgen Photography; Fellow of the New York Academy of Medicine. 614 pages, octavo, cloth, gilt. Price, \$5 net; postage, 35 cents. Now ready for delivery. New York: William Beverley Harison, publisher, 3 and 5 W. 18th street.

Medical Items.

DR. C. R. DICKSON has removed to 343 Sherbourne Street, Toronto.

DRS. G. STERLING RYERSON and GEORGE BINGHAM, of Toronto, have gone to England for the jubilee season.

DR. J. T. DUNCAN has returned to London, England, for the summer, to continue his studies of the eye, at the Royal Ophthalmic Hospital, Moorfields.

THE INTERNATIONAL ASSOCIATION OF RAILWAY SURGEONS.—At the recent meeting of what was formerly known as the National Association of Railway Surgeons, held in Chicago, May 5th and 6th, the name was changed, as a compliment to the membership of Canada and Mexico, to the International Association of Railway Surgeons. The next meeting will be held in Toronto in May, 1898. Dr. George Ross, of Virginia, was elected president; Dr. Hutchinson, of Montreal, first vice-president; and Dr. Bruce Riordan, of Toronto, chairman of the committee of arrangements.

ANECDOTE REGARDING LORD LISTER.—While going round his wards in the Glasgow Royal Infirmary one day, Sir Joseph, then plain Mr. Lister, came to the bedside of a patient whose arm had been severely crushed without the skin having received any injury. Turning to the assembled students, he said: "Gentlemen, I have frequently noticed that when severe injuries are received without the skin being broken, the cases nearly always recover. On the other hand, trouble is always apt to follow, even in trivial injuries, when a wound in the skin is present. How is this? I can not help thinking that the man who is able to explain this problem will be one who will gain for himself undying fame." Lord Lister himself has proved the truth of his prophecy.—*London Daily News*.

The semi-centennial jubilee meeting of the American Medical Association, just closed in Philadelphia, marks one of the most successful meetings, both from the scientific point of view, and in attendance, in the fifty years of its history. The presence in Philadelphia of the President of the United States, who made an address before the Association, lent additional interest to the occasion. The physicians and citizens of Philadelphia vied with each other in catering to the enjoyment

of the visitors. The officers elected for the ensuing year are : George M. Sternberg, D.C., president ; J. M. Matthews, Kentucky, first vice-president ; W. H. Thompson, Indiana, second vice-president. Dr. W. B. Atkinson, Philadelphia, was retained as permanent secretary. After a spirited discussion, the committee on place of meeting selected Denver, Colorado, for the session of 1898. A more extended report will appear in a later issue.

THE bubonic plague at Bombay is reported to be rapidly waning. At the end of December it reached its climax with 1,400 or more deaths a week. It has now fallen to less than one-third of that mortality. The city of Bombay is undergoing a thorough sanitary renovation ; 130,000 dwelling-houses were condemned, 109 ordered rebuilt, tiles removed from 1,027, floors dug up in 492, several hundred were lime-washed, 299 ordered vacated, and three destroyed by fire. Indeed, the infected quarter is being dealt with in a fashion beyond the criticism of the most advanced sanitarian. It is doubtful if a more satisfactory sanitary achievement has ever been made before, and it reflects the highest credit on the administrators of sanitary law in that plague-stricken city.
—*Buffalo Medical Journal*.

SIR JOHN ERICHSEN'S WILL.—The will of Sir John Erichsen, the terms of which have just been made public, contains many details of interest. In the first place, considerable surprise has been expressed that the sum bequeathed to University College Hospital was no more than £2,000, which, by the way, is exclusively left to the rebuilding fund, and not for the purposes of maintenance. By many persons interested in the charity it was thought that Sir John Erichsen would have conferred a handsome endowment upon the hospital, reaching many thousands of pounds. Mr. Christopher Heath and Mr. W. A. Meredith are bequeathed the moiety of the copyright, in equal shares, of the testator's well-known work, "The Art and Science of Surgery," exclusive however, of the profits on the tenth, or present, edition. The Royal College of Surgeons receives Sir John's bust, in marble, by Thorneycroft. A great-niece is the chief legatee ; she is left £20,000, and takes the half-share of the residuary estate, with her father. The value of the personal estate was £88,619. It was reported in the newspapers that Mr. Heath and Mr. Meredith had each received a legacy of £5,000, but this statement was incorrect.

HE OBSERVED TOO MUCH.—Papa : Don't you think he is very large for his age?—only fourteen months. Friend : Ye-es. Do you know, I've observed that most babies are large for their age.—*Puck*.

IT MADE HIM STUTTER.—First Deaf-Mute (speaking by finger-signs) : What makes you stutter so? Second Deaf-Mute (speaking ditto) : I can't help it. I fell off my bicycle yesterday and sprained my first finger.—*Judge*.

HENRY SHOEBOOTHAM, M.D.—Dr. Shoebotham practised for many years in the western part of Ontario, but for the last few years resided in Toronto. He died at his late residence, 597 Markham Street, May 26, 1897, aged 66.

WILLIAM MCCARGOW, M.D.—Dr. McCargow died at his home in Hamilton on Friday, April 16, 1897. He at one time practised in Caledonia, but many years ago went to Hamilton. He was a member of the Ontario Medical Council from 1880 to 1885.

WILLIAM KEMPT, M.D.—Dr. Kempt was for many years a well known practitioner in Lindsay, but over a year ago he was compelled to give up active work, and removed with his family to Peterboro'. He enjoyed fairly good health lately, until April 18, when he became suddenly ill and died in a few minutes. A widow, two sons, and four daughters survive.

DAVID BELL RUTHERFORD, M.D.—A telegraphic despatch was received in Belleville, May 11, stating that Dr. D. B. Rutherford had died in California. Dr. Rutherford spent his boyhood in Belleville, and received his medical education in Kingston, graduating in 1882. After practising for several years in Morrisburg, his health failed, and he went to California. His friends hoped that he would there be restored to health, but, to their sorrow, the telegram referred to tells a different story.

JAMES BUCHANAN BALDWIN, M.D.—Dr. James B. Baldwin, of Toronto, died at his late residence, 46 Avenue Road, May 30, after a short illness of two days. He was 58 years of age, and, as he had always enjoyed fairly good health up to the time of his last illness, the announcement of his death was altogether a sad surprise to his many friends. He had not been in active practice for years, but had spent his time and energies chiefly in connection with military matters. He had been for some years major in the Governor-General's Body Guard.

THOMAS MILLER, B.A., M.D.—Dr. Thomas Miller, of Hamilton, had been in poor health for three or four years. In 1895, he went to England, with the hope that a change of climate would be beneficial. While in England he consulted certain physicians, and put himself on a certain course of treatment. After his return to Canada, he seemed for a time to be better, but soon took a change for the worse. After a long and painful illness he died, June 15th, aged 60.

Dr. Miller took the Art's Course in Queen's University, Kingston, and was made B.A., in 1854. He afterwards attended the Toronto School of Medicine, and graduated in the University of Toronto, from which he received the degree of M.B., in 1858, and also M.D. in 1859. For a time after graduating he practised in Flamboro, County of Wentworth, but removed to Hamilton in 1877, where he soon acquired a large practice. He took a prominent part in politics, and twice contested the riding of North Wentworth as a Conservative candidate, but was defeated in each contest. He was a member of the Ontario Medical Council, from 1891 to 1895.

GEORGE WILLIAM WOOD, M.D. — Dr. G. W. Wood, of Delhi, Ontario, died suddenly from apoplexy, May 31st. He graduated in the University of Pennsylvania in 1865, and commenced practice in Delhi in 1866. He remained there until 1873, when he removed to Sparta, Elgin county. In 1877 he returned to Delhi, where he had since remained in active practice. Like many other doctors throughout Canada, he took great interest in politics, and was a prominent member of the Reform party.

SURGEON LIEUT.-COLONEL FREDERICK WM. STRANGE. — Dr. Frederick W. Strange, the well-known surgeon, of Toronto, died at his late residence on Saturday, June 5th, 1897, aged fifty-three. The cause of his death was apoplexy. He appeared to be in good health up to seven o'clock of the morning of that day. He got up at six o'clock to get together his baggage which he intended to ship to the military camp at Niagara. At seven he became dizzy, and had severe pain in his head, but was, for a time, conscious, and refused to allow his house-keeper to send for a physician. His symptoms became rapidly worse, unconsciousness ensued, and he died before the arrival of Dr. Leslie, at nine a.m. He was buried with military honors on Monday afternoon, June 7th.

Dr. Strange was born in England, received his medical education in Liverpool, and at University College, London, and became M.R.C.S., England, in 1866. He acted for a time as assistant surgeon in the London Surgical Home, and the Hospital for Women. He then engaged in practice, but in 1869 came to Canada, to take Dr. W. B. Geikie's place in Aurora. He lived in that town for about seven years, and secured a very large practice. Since 1876 he has lived and practised in Toronto. His success here was phenomenal. Within a year he reached the zenith of his career as a surgeon, a family, and consulting physician. In 1878 he was elected as member for the Dominion Parliament, and retained his seat until the following election in 1882, when he decided, for professional reasons, not to allow his name to go in for nomination. During his military career he had been a captain in the 12th York Battalion, captain in the Queen's Own Rifles, and surgeon of "C" Company Infantry School, Toronto. He also acted as surgeon-general in the Northwest rebellion. In private life his experience was varied; his domestic relations were, for years, sadly unfortunate, and his methods of living, unorthodox. During the later years of his life he gave up family practice to a large extent, and confined himself largely to military matters and consulting work.

He was a cultured, polished, English gentleman, with a commanding presence, a charming and kindly manner, and a marvellous personal magnetism. He acquired respect, confidence, and love, in a sick room more readily and more certainly than any physician the writer has ever seen. One of his most striking characteristics was his exceeding fondness for young children. He was bold as a surgeon, generous towards

his friends, self-reliant in dealing with the world, defiant towards his enemies, and yet gentle as a woman in handling and treating the sick and afflicted. In the large army of friends he has left are to be found the high and the low, the strong and the weak, the rich and the poor, the old and the young—"all sorts and conditions of men."

The funeral service was very impressive. We take the following from the *Toronto Mail and Empire*:

At about half-past three the lid of the casket was closed, and the assembled troops of the various regiments formed into two long lines from the casket to the west end of the hall. The officers were grouped between the lines, and the general public crowded the galleries and the remaining space on the main floor. Rev. Mr. Williams mounted the rostrum in the midst of the flowers and palms, and a great hush fell on the assembly. It was a strange and impressive sight. The rain outside poured down pitilessly, and the sky was so darkened as to make but a soft and subdued grey light in the vast hall. With serious faces and bowed uncovered heads the crowd listened to the beautiful words of the Church of England service for the dead, as they fell in measured tones from the lips of the venerable white-haired chaplain. It was a moment not quickly to be forgotten, and it was plainly noticeable that the most of those present felt the serious solemnity of the occasion.

WILLIAM THOMAS AIKINS, M.D., LL.D.—This country has lost one of her great men through the death of Dr. W. T. Aikins, of Toronto, which occurred on the evening of May 24th. We in the medical profession are chiefly interested in his work as a surgeon, and a teacher of surgery, for a long term of years. He received his preliminary education at Jefferson Medical College, Philadelphia, from which he received his degree of M.D. in 1850. In the same year he commenced practice in Toronto, and very soon achieved success. From 1850 to 1856 he was intimately associated with the late Dr. Rolph, and was a teacher in Rolph's School of Medicine. In 1856 he was appointed Lecturer in Surgery in the Toronto School of Medicine, and acted in that capacity until 1887, when the Toronto school ceased to be a teaching body on account of the reorganization of the Medical Faculty of the University of Toronto. He had been, for many years, president of the corporation of the Toronto School. He was one of the most active promoters of the re-establishment of the Medical Faculty of the University, in which he was appointed Professor of Surgery. He was also Dean of the Faculty from 1887 to 1893.

Dr. Aikins was for many years the best surgeon in Ontario, in the opinion of a large number of practitioners, and certainly had the largest practice. He received many inspirations in various directions while studying in Philadelphia, and, as a result, made many improvements in the methods then in vogue for the treatment of fractures and dislocations, and also in other subjects connected with surgery. He possessed good judgment in things surgical, and was skillful and careful as an

operator. He was essentially practical at all times, and was especially careful about carrying out all the details which are necessary to make an operation successful. He took great interest in Listerism, and went to Great Britain in 1880 largely to see and study Lister's methods. He was naturally conservative, but was always willing to accept and adopt new procedures which appeared to him good. He did an enormous amount of work in his professional lifetime, and was always extremely charitable and kind to the sick poor.

He was, for a long time, one of the most admirable teachers of surgery on this continent. His great aim was to teach—not to lecture—and his methods of illustration were especially good. He held the opinion that, in teaching students, it was always important to show them something while talking to them. He wished to attract the eyes as well as the ears. When the writer was a medical student he spent a portion of a year, in 1872, in the hospitals in New York, and saw something of all the surgeons in that city, but came back to Toronto firmly convinced that he had seen no better teacher of surgery than Dr. Aikins.

In his connection with medical schools he did much to advance the standard of medical education. He was one of the most active promoters of the Ontario Medical Council. Among those who worked with him in this direction were Drs. H. H. Wright and James Thorburn, of Toronto, and Dr. Dickson, of Kingston. The desire of these men was chiefly to establish a central examining board. While their efforts were successful, their powers as "school men" were curtailed, at least from a money-making point of view, because the licensing power was taken from the schools and universities. We think, therefore, their motives were good and unselfish, and deserve commendation rather than denunciation.

Apart from matters purely medical, he was a broad-minded citizen, and took an active interest in all educational questions. He belonged to the Reform party in politics, and was once a candidate in Toronto for the Parliament of Canada. He was a prominent member of the Methodist church, and one of the most generous contributors towards various organizations and churches in that denomination. He was in all respects a good and lovable man. He suffered much, during the last few years of his life, from many worries connected with "school" matters, business and other troubles, but was always patient and uncomplaining. He was seriously ill for about two years, and for many months his relatives were impressed with the sad fact that he must soon depart. Notwithstanding such warnings, the announcement of his death caused considerable shock and profound grief among the vast host of friends and admirers who will ever remember the kindness, and goodness, and greatness of him who has gone.

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HYPERCHLORHYDRIA.*

BY H. J. HAMILTON, M.B., L.R.C.P. LOND.

TORONTO.

STRICTLY speaking, hyperchlorhydria cannot be considered a disease, but merely a symptom of many morbid conditions of the stomach, in which the most prominent feature is an increase in the hydrochloric acid and ferments of the gastric juice.

This is so very frequently the most marked symptom of the neurosis which it accompanies, that the name may be properly used to designate the pathological state. It is true that the name does not point to any anatomical lesion, but the fact that the hyperacidity may explain all the subjective disturbances of the patient, and may also form a basis for rational treatment, justifies us in looking upon it as a disease.

During the past fifty years many writers have recognized disorders of the stomach accompanied by hyperacid gastric juice. Pem-

* Read before the Ontario Medical Association.

berton, Copland, Todd, Budd, Trousseau and others, observed this condition, but Reichmann, in 1882, was the first to study this state with our modern methods, and to him is due the credit of investigating the subject from a scientific standpoint. The publications of Riegel, Reichmann, Jaworski, and Glusinski, Ewald, Mathieu, Einhorn and others in recent years, have given us a great deal of information on a subject which was almost lost sight of, though observed so long ago by Pemberton, Budd, Trousseau and others.

It is the intention of the writer to consider the subject from a purely clinical point of view, calling attention to three classes of cases recognized by recent writers. These are :

(1) Simple hyperchlorhydria, which is present only during digestion, and absent when the patient is fasting.

(2) Hyperchlorhydria occurring in attacks like gastric crises or fits of migraine.

(3) Hyperchlorhydria accompanied by hypersecretion, both during fasting and after meals, and by dilatation of the stomach (Reichmann's disease).

It is very hard to draw the line accurately and say just where normal secretion ceases and excessive secretion begins. Ewald, Einhorn and others say that the normal degree of acidity of the gastric contents in healthy subjects one hour after Ewald's test breakfast is from 40 to 60, and have considered cases in which the acidity was between 60 and 70, or above 70, as pathological. The fact remains that it is impossible to say that some could not have a degree of acidity of more than 70, or even 100, continuously, and not suffer subjective symptoms. If there were no symptoms referable to the stomach, it is unlikely that an examination of the stomach contents would be made, and, therefore, the degree of acidity would not be recognized. From a large experience Einhorn says that though this would be possible the rule is that the greater number of patients with an acidity of 70 are not totally free from disorders of digestion. Generally speaking, therefore, we may conclude that a degree of acidity above 70 is pathological.

Etiology. The etiology of the different forms of hyperchlorhydria may be discussed in common. The disease occurs more frequently in adult life. The young are not exempt, and it is not uncommon among the old. Those who are neuræsthenic or neuropathic are often victims. Those given to abuse of alcohol sometimes suffer. It is more common among the wealthy and educated classes, among those who lead an indulgent, lazy life, who eat highly spiced foods, drink alcohol, and retire at unreasonable hours.

It is often found among those who suffer from grief, worry and mental overwork. It is sometimes found among the poor.

I. SIMPLE HYPERCHLORHYDRIA.

Symptoms. The symptoms of hyperchlorhydria appear gradually and often resemble those of nervo-motor dyspepsia, such as a sense of weight and fullness after eating, malaise, eructations, flatulence, and constipation. The suffering is greater than in cases of nervo-motor dyspepsia. The sense of discomfort increases, and, in from two to five hours after eating, instead of immediately after meals, pain of a severe character supervenes. This pain does not subside until food is taken again.

As a rule these patients soon learn what agrees and what disagrees with them, voluntarily giving up starchy food, and preferring that diet which is rich in albumin, such as meat, milk, and eggs. The ingestion of food of this class, or the administration of an alkali, relieves the pain. The severity of the pain in each individual case depends chiefly upon the nature of the food taken; thus, patients living on a vegetable or starchy diet suffer much more than those who habitually eat meat, eggs, and other albuminoids. In addition to the pain there is often more or less severe headache, or attacks of dizziness, which come on either with the pain or independently of it.

The appetite is usually not impaired, but rather increased, and unless improper or insufficient food has been given, it is not the rule for the patient to lose greatly in weight. During fasting the stomach is empty, or nearly so, not often containing more than 5 c.c. There is neither continuous hypersecretion nor permanent dilatation present.

On examination there is a diffused tenderness over the gastric region. There is not actual pain on pressure, but a tenderness not by any means localized.

Analysis of the stomach contents expressed one hour after the ingestion of Ewald's test breakfast of a half slice of bread and a cup of tea or water without milk or sugar, shows an increase of hydrochloric acid and digestive ferments. The filtrate digests egg albumin very quickly, often in a half-an-hour. Three or four hours after Leube-Riegel's test dinner the microscope will show that the meat has been perfectly digested; but, on the other hand, the starchy substances will be found unaltered, or simply swollen up. Lugol's solution added to the contents will give a blue or dark red color. Usually the increased acidity is due to the excess of hydrochloric acid, the difference between the total acidity and the amount of free hydrochloric acid as a rule being small.

The urine is often less acid than normal, and even alkaline, but not always, for sometimes the degree of acidity of the urine and gastric secretion are found increased at the same time. The writer has observed this in a case which came to his notice about a year ago. At the time of the attack he noticed that the acidity of the urine was markedly increased.

In the early stages there are often intermissions in the course of the disease, the patient suffering for days or weeks, then returning to health, the condition recurring without special cause, or after mental worry, grief, or overwork. The intervals become shorter, until finally the condition is continuous.

Prognosis. There is no danger of fatal issue, although, without rational treatment, the patient often lapses into a chronic state of ill-health. As a rule the prospects for recovery are good under judicious management, although in severe cases the condition may continue.

Diagnosis. The subjective symptoms pointing to hyperchlorhydria are, pain three or four hours after eating, which is relieved by taking an alkali or food, especially meat or that of an albuminous character, normal or increased appetite, sometimes thirst and generally constipation. There is no marked loss of weight nor cachexia. These symptoms, together with an empty condition of the stomach during fasting, and an increased amount of hydrochloric acid in the gastric contents one hour after taking Ewald's test breakfast, on repeated examination render the chain complete. Other morbid conditions giving rise to similar symptoms are gastric ulcer, biliary colic and permanent hypersecretion.

The pain in gastric ulcer, even if accompanied by increase of hydrochloric acid, does not respond so completely to alkalies as that of simple hyperchlorhydria. In gastric ulcer there is greater wasting from inanition. The vomiting of blood, though not always present in gastric ulcer, is never a symptom of hyperchlorhydria. Biliary colic without icterus or appreciable increase in the size of the gall-bladder may give rise to confusion, but in this condition the pains usually do not bear the same definite relation to the ingestion of food as in hyperchlorhydria, and are not relieved by food or alkalies. The pains in biliary colic are usually referred to the right epigastric or hypochondriac region. In hyperchlorhydria the pain is more likely to be confined to the epigastric region, but sometimes extending more to the right.

In continuous hypersecretion there is a large amount of fluid in the stomach during fasting, often 1,000 c.c. There is often vomiting, and the most severe pains come on during the night.

II. GASTRIC CRISES.

In this class of cases we do not include those first observed by Charcot in locomotor ataxia and other cerebro-spinal diseases, but rather refer to a class resembling the gastric crises of tabes, occurring in neuropathic cases and without any anatomical lesion, with however hypersecretion and increased acidity. Rossbach described a condition, gastroxynsis, a nervous disturbance of the stomach, ushered in by severe headaches, accompanied by gastric pain and vomiting of very acid secretions. Reichmann described the same class of cases and called them by the name of "*gastro-succorrhœa continua periodica*."

In this condition there is a constant secretion of gastric juice, with attacks of severe pain and vomiting.

The onset is sudden as a rule, the disease being ushered in by a sense of distress in the gastric region, restlessness, followed by pain and nausea. In an hour or two vomiting of the gastric contents supervenes. Relief may follow for a short time but soon the symptoms return. The appetite is lost and thirst intolerable. Vomiting often occurs in the middle of the night or early in the morning during fasting. There is no food in the vomited matter, nothing but clear gastric juice with an excess of hydrochloric acids and ferments (rennet and pepsin), and a small quantity of bile. Although the patient may take neither food nor drink, vomiting of a large amount of clear fluid supervenes in a few hours.

There is insomnia, the pain preventing sleep. An attack often lasts for two or three days, then the nausea and pain subside. Constipation is marked. During the intervals the gastric juice may be normal or there be hyperchlorhydria present, but the stomach is always free from secretion during fasting. The disease may not manifest itself again for weeks, months, or even years, or on the other hand, the intermissions may become shorter and eventually the patient may become a victim of chronic hypersecretion. Between the attacks the patient may enjoy fair health with proper restrictions as to diet.

The following is the history of a case which Dr. J. E. Graham kindly referred to me for examination of stomach contents about a year ago. It may fairly be classed as a type of the cases called by Reichmann "*Gastrosuccorrhœa continua periodica*."

C. D., physician, æt. 52. Has always had a large practice and has worked very hard, giving his undivided attention to the pursuit of his profession, conscientiously denying himself for the benefit of his patients.

Has always been dyspeptic, suffering frequently from pyrosis. For the past ten years he has suffered from attacks of gastralgia of an aching character. During the past five years has had several attacks of acidity. With a few days of rest all acidity would pass and he would resume work.

Family history, nervous and dyspeptic. Habits good, dieting carefully, using no tea, tobacco, nor alcoholic beverages.

During the winter of 1895-96 he suffered from constipation, gastralgia, insomnia, and lost about eight pounds in weight. At times suffered from a feeling of great exhaustion, which would pass away with the action of a mild aperient. Stools gradually became lighter in color than normal, but never actually grey. When the stools were of light color he felt weak and exhausted, when they had a natural color he felt much better. He suffered stiffness and soreness of the muscles, especially in the morning. These symptoms crept on so gradually that he did not appreciate their importance. In June, 1896, after some months of hard work and some worry, he was taken with vertigo, soon followed by vomiting of a clear, odorless fluid, of intense acidity, which continued at intervals for three days and nights. Soon after this he was seen by Dr. J. E. Graham and the writer, who examined the stomach contents after a test breakfast. The total acidity was very high, about four parts per 1,000, due to excess of HCl, lactic acid absent and starch digestion retarded. The symptoms at this time were gastric, distress after eating and also when the stomach was empty, swelling and tenderness in the liver region, intestinal flatulence, constipation and the passage of large flakes or strips of mucous from the rectum.

The nervous symptoms were insomnia, aching and soreness of muscles, cold extremities, asthenopia, and loss of memory.

He was ordered a diet of milk, eggs, and meat, with as little starchy food as possible, complete rest of body and mind, and bismuth and soda to be taken after meals. The albuminoid diet was not fully carried out, the patient thinking that meat caused distress. For the next two months he continued to suffer and to lose weight. He saw Drs. Stewart and Lafleur, of Montreal, who found the same conditions, and again urged him to use a more albuminoid dietary. At this time lavage and the use of milk were the most helpful measures. In the month of October a most serious illness in his family caused severe nervous strain. In two weeks he lost eight pounds in weight, and the gastric distress was so much increased that he was compelled to live on milk alone. After a short time he became able to dispense with alkalies in his milk, and soon began

to take eggs and other albumins. Since that time progress has been slow and intermittent, but on the whole steady. At the present time gastric distress has almost subsided, unless when provoked by too much exercise of body or mind, or by a careless or hasty meal. During the attack the urine was alkaline. Return of normal acidity was associated with diminished secretion of HCl.

Diagnosis. The symptoms already described point to the condition present. The secretion of a large quantity of gastric juice between meals or during fasting is determined by passing the stomach tube. Examination will reveal an excess of HCl. It will be necessary to exclude ulcer or old cicatrices in the stomach, pylorus or duodenum, and all other organic lesions, also cerebro-spinal affections which cause similar symptoms of reflex origin.

III. HYPERCHLORHYDRIA WITH CONTINUOUS HYPERSECRETION.

This condition was called *gastro-succorrhœa continua chronica* by Reichmann. It is characterized by continuous secretion of highly acid gastric juice even during fasting.

Symptoms. The patient suffers for a considerable time from dyspeptic symptoms, which are caused by an excess of HCl in the gastric juice. This is followed by pain, and very soon vomiting sets in. We have, in fact, all the symptoms of the condition described in *gastro-succorrhœa continua periodica*. At first these attacks occur at considerable intervals, but increase in frequency until the patient may have two or three spells of vomiting every day. Constipation is marked, and in some cases, but not always, the emaciation is great. At a later stage of the disease, when the glandular structure of the stomach has become atrophied, the hydrochloric acid becomes less or disappears. The hypersecretion, however, continues, and the gastric juice will contain a large amount of fixed chlorides, the mucous membrane being unable to elaborate the HCl.

These marked cases of hypersecretion called Reichmann's Disease, after the author who described them clearly in 1882, are attended with dilatation of the stomach and permanent stasis.

Tetany is a symptom very often found in diseases of the stomach. Bouveret and Devic claim that it is more common in hyperchlorhydria than in any other condition.

When we consider that simple hyperchlorhydria, if it continues, is likely to pass into constant hypersecretion, and this condition into gastritis and incurable dilatation, we cannot give the subject too much attention.

Diagnosis. Although the symptoms described above point to continuous hypersecretion, a positive diagnosis can only be made by examining the stomach contents after a test breakfast, and by passing a tube into the stomach and withdrawing the contents repeatedly during the fasting condition. After Ewald's test breakfast the amount of HCl is increased, starch digestion is incomplete, in fact, the starch products may be found unchanged, Lugol's solution giving a violet or bluish color. In about half-an-hour a thin slice of hard-boiled egg will be digested by the filtrate. The liquid withdrawn from the stomach during fasting contains no particles of food and no starchy substances. It is usually clear or colored slightly by a little bile. The difference in the rapidity with which albuminates and starches are digested is an important point in diagnosis, and can be determined better after Leube-Riegel's test dinner. In three or four hours afterwards there are scarcely any particles of meat present in the expressed contents, and the starches remain unaltered.

It is necessary in making a diagnosis of continuous hypersecretion to exclude all possible causes of stenosis of the pylorus by organic lesions, and gastric ulcer, which may be accompanied by hypersecretion. In cases of stenosis of the pylorus with dilatation, the liquid which the stomach contains during fasting also contains food particles which can easily be detected. In such cases the hypersecretion is secondary to the stenosis, and they should not be classed with those of primary succorrhœa. If care be taken to exclude all cases of dilatation from stenosis, the number of cases of continuous hypersecretion will be found to be very small. It is very essential that a diagnosis should be made, because of the great difference in treatment of the two affections, that of stenosis being surgical. In a case of ulcer the vomiting of blood or the presence of blood in the stools, together with a small circumscribed spot in the epigastric region, which is extremely painful on pressure, would point to that disease. The absence of these symptoms, and the presence of the symptoms of hypersecretion, would justify one in making a diagnosis of primary continuous hypersecretion.

The comparative infrequency of genuine cases of gastro-succorrhœa continua chronica is sufficient reason for referring to the following case, for the early history of which I am deeply indebted to Dr. Wallace, of Hamilton.

A. B., æt. 46 (born 1837), married, six children all in good health. He was a heavy smoker, but a total abstainer from all alcoholics. He was of a nervous, energetic temperament, a hard

reader, neglecting physical exercise to attend to his professional duties.

Family history good. Father died of typhoid at fifty-four, mother of pneumonia at fifty-seven years of age.

For several years before his illness of 1882 he suffered from flatulent dyspepsia with slightly acid eructations. For two or three years prior to this time, he complained at long intervals of some pain in the epigastrium. He always spoke of it as being of a burning character, and it began two or three hours after taking food. It continued nearly or quite up to the time of taking the next meal, and was usually relieved thereby. In the autumn of 1882, these so-called dyspeptic symptoms increased in frequency and severity. In January, 1883, they became very severe, and vomiting at irregular intervals supervened. The absence of food in the vomited matter was a frequent comment of his own. During the month of March and part of April he was confined to bed, suffering great pain and frequent vomiting. In the middle of April he went to Europe. While there he consulted Drs. Gairdiner and McCall Anderson. Considerable dilatation of the stomach was found by both. Dr. Murray, of Newcastle, also saw him, and on examining the stomach contents found free hydrochloric acid in abundance. During four months in Great Britain, he was confined to bed for four weeks at one time. At other times for one, two or three days. Emaciation was great, weighing 186 pounds in January, 1883, and 117 pounds in the latter half of the same year. On his return home in the fall of 1883 he slowly improved, but had frequent attacks of pain and vomiting. In 1885 and 1886 he became almost well. In the fall of 1886 a fire broke out in the institution of which he had charge, at which he worked very hard. Immediately he was again stricken down, and never again became so well. At times he had fair health, but had even then more or less frequent attacks of vomiting and pain. It was a common thing for him to take three or four glasses of fluid in twenty-four hours and vomit at one time two-thirds of an ordinary wash-basin of intensely acid ill-smelling fluid. Some days he would vomit that quantity, at each of two or three times. As a consequence of this loss of fluid the skin was harsh and dry. The act of vomiting was very violent, the fluid rushing from nose and mouth and the tears streaming down his face. Vomiting occurred very often at night or in the early morning. Thirst was intense and constipation always marked. Before profuse vomiting he would draw attention to the outlines of his distended stomach, and lying on his back would elicit a splashing sound. He consulted Dr. J. E. Graham, who found large percentages of free HCl in the stomach contents.

Dr. Wallace says, "So very acid were the contents that I have several times seen the mucous membrane of the pharynx, mouth, and lips peel off like wet tissue paper, immediately after a severe attack of vomiting. Blood would ooze from the surface, and he would be in a most pitiable state for two or three days." He would have attacks lasting for one, two, or three days or a week, and then be free for a week or several weeks. Sometimes the intervals were so short that the condition was practically continuous.

The patient's widow recalls four or five clearly defined attacks of tetany. Without suggestion she describes the attacks, and they were certainly typical. The elbows close to the side, and the forearm bent at about a right angle, and pronated, the wrist slightly flexed, the thumb strongly flexed and adducted. The characteristic deformity of the hand was present. The muscles of the neck stood out like cords, the corners of the mouth drawn back, but one side more strongly than the other. Any effort to speak was in vain. In one attack opisthotonus was present.

He had a severe attack of herpes zoster extending down one leg. There was a scattered chain of vesicles along the outer side of the thigh and leg, along the outer side of the foot, and some red and painful spots on the outer side of the planter surface, which would not disappear on pressure. The usual severe neuralgic pains of zoster were present.

In this case the occurrence of tetany and herpes zoster are of special interest. The contractions in the attacks of tetany were not confined to the muscles of the extremities as is the rule, but those of the back, face, and tongue were also involved. Einhorn says that tetany makes the prognosis bad in these cases, more than 70 per cent. proving suddenly fatal. The interesting feature in this case is recovery and fair health for six or seven years before death, which took place in the year 1896 from an apoplectic seizure.

TREATMENT.

In the first place the habits of life must be corrected. No rule will apply for all cases. Business and professional men who have been overworked, and who have suffered a great deal of mental worry should be sent to quieter surroundings, where the brain will have a chance to rest. Those who have been given to dissipation, late hours, and social functions should lead more abstemious lives. The wealthy and indulgent, with nothing to do, and who are inclined to pay too much attention to their health, should be provided with some kind of work. Some systematic bodily exercise should be

enjoined, also cold bathing, and an outdoor life as far as possible. In addition to ordering a suitable daily life for the patient there are other principles of treatment to be observed.

(1) Remove as far as possible all causes which stimulate gastric secretion.

(2) Neutralize the excess of HCl by alkalies, and if possible prevent the increased formation of HCl in order that the mucous membrane may be spared from its irritating effect.

(3) A diet depending upon the chemical condition of the stomach should be ordered.

(4) Treat the gastro-intestinal atony and the phenomena resulting therefrom.

(5) Pain not relieved by the ordinary measures for the removal of the excessive acidity should be treated with remedies directed to the relief of that symptom. It is not often, however, that morphia or other opiates are required.

Combat the neuræsthenic condition by correcting the habits of life.

The patient must give up all kinds of food, drink and medicines which irritate the already hyperæsthetic mucous membrane. Highly spiced foods, alcoholic beverages, high meats, strong cheese and some drugs, as iron, naphthol, bromides and iodides, are injurious.

Slow and proper mastication should be enjoined. The habit of eating rapidly and bolting food should be interdicted. The diet should consist largely of albuminous substances, meats, eggs, milk and the like. Starches should be limited. Some bread, not fresh, preferably toasted, and custards may be allowed, but potatoes, green peas, spinach and other vegetables should be interdicted in the beginning, and taken very sparingly as improvement advances. It is generally better to give five meals a day instead of three. In this way less may be taken each time, and the excess of HCl neutralized by the ingestion of proteids, thus sparing the mucous membrane of the stomach.

Mathieu gives some valuable suggestions as to the administration of alkalies. By estimating the degree of acidity, and as far as possible the amount of gastric juice secreted during the hours of digestion, he determines the excess of HCl which should be neutralized. Knowing the chemical equivalent of HCl and bicarbonate of soda to be as 1 to 1.48, he estimates the amount of the alkali required to neutralize the excess acid, and gives it in divided doses during digestion. The amount of gastric juice secreted after each meal being estimated at four or five litres, with an acidity of 3 parts to

1,000, there would be from 12 to 15 grammes of HCl to be saturated. This would require from 20 to 25 grammes of bicarbonate of soda. Sometimes large doses of bicarbonate of soda cause pains in the kidneys and vesical irritation. This was very marked in case No. 1 reported in this paper. In hyperchlorhydria, bicarbonate of soda should never be given in small doses on an empty stomach, for given in this way it has a tendency to stimulate the secretion of HCl. The amount of bicarbonate of soda may be lessened by giving prepared chalk and calcined magnesia in combination with it. This should be given just before the gastric pains are wont to appear, and repeated often enough to prevent gastric distress. The principle is that alkalies should be given in doses sufficiently large and frequently enough to neutralize the HCl in the gastric juice secreted during digestion.

In cases of hyperchlorhydria with continuous hypersecretion, larger doses will be required than in simple hyperchlorhydria.

Ewald and Hayem claim that sulphate of soda diminishes the rate of secretion of hydrochloric acid. Hayem says that Carlsbad and Vichy waters given in doses which contain about one drachm of this salt every morning before breakfast sometimes leads to the disappearance of the HCl entirely. The writer has tried it, but cannot say that such a result has followed. Indirectly it may act by helping to remove the constipation, improving the general condition of the patient, and thereby relieving the neurasthenia upon which the hyperchlorhydria depends. In cases of simple hyperchlorhydria, treatment by rest, alkalies, nitrogenous diet, and avoidance of all things which irritate the gastric mucous membrane is sufficient if persevered in until the secretions become normal.

When there is hypersecretion more rigid measures must be taken. Rest in bed, especially during attacks. The dietary confined to small quantities of milk taken frequently and with sufficient doses of alkalies to prevent pain. In a short time this may be followed by meat and eggs, and starchy food interdicted until the stomach is found to be nearly empty in the morning.

Lavage in the morning before breakfast is of great service. After washing the stomach out, it may be sprayed or washed out with nitrate of silver, 1 or 2 to 1,000. In washing out with the nitrate of silver, pass the stomach tube and pour in about 300 c.c. of the solution, allow it to remain for about five minutes and then syphon off.

Notwithstanding the fact that electrization has been supposed to stimulate the gastric secretion, some cases seem to respond to

the galvanic current especially when applied directly with one electrode in the stomach. Einhorn's "Deglutable Stomach Electrode" is the most recent of the many which have been devised.

The constipation should be treated by enemata, massage and electricity in preference to using purgatives very frequently, as they have a tendency to increase the secretion of the gastric juice.

In obstinate cases which do not improve by milder measures, certainly the spraying and galvanization should be resorted to. Just how electricity acts is not understood, why it should relieve symptoms which appear to be opposites is paradoxical. It may be that it helps to remove the innervation which forms the foundation for the gastric disturbance.

A CASE OF INTRA-LARYNGEAL MYCOSIS.*

BY PRICE-BROWN, M.D.,

TORONTO.

MYCOSIS FUNGOIDES, a comparatively rare disease, when it does occur usually affects some portion of the fauces, and is termed mycosis pharyngeus, mycosis tonsillaris, mycosis ligualis, etc., according to the situation of the mucous membrane affected by it.

The term mycosis, from the Greek word *mykes*, signifying fungus, indicates the character of the growth. It consists of a deposit upon the surface or within the crypts of the mucous membrane, of the spores of leptothrix mycosis. These gradually develop into plants of larger or smaller growth, shooting out above the epithelium and sometimes broadening, umbrella or mushroom-like, upon its surface.

The original source of the fungus is still a matter of question. The microscopical examinations of Toeplitz, Wagner, Damaschino, and others have proved, however, that the leptothrix is very frequently found in the mouth; and that a condition of impaired health would appear to be all that is required to secure the attachment and growth of the fungus within the pharynx. The peculiar feature is that, although the bacteria are prevalent in such large numbers in the oral cavity, they should so rarely find a nidus for development there, and should prefer the faucial region. Possibly the intense muscular activity of the mouth may act as a deterrent to leptothrix development.

Bosworth tells us that the leptothrix belongs to the schizomycetes group of fungi, a term applied to a variety of vegetable organisms found in drains, garbage, bogs, etc. They are also found in milk, urine, and watery solutions containing organic matter. The microscope reveals the thread or rod-like cells of the leptothrix, imbedded in amorphous granules. If treated with Lugol's solution, these

* Read before the Ontario Medical Association, Toronto, June, 1897.

bodies assume a bluish tinge, indicating the presence of starch. The cells vary in form according to the anatomical region from which they are removed. When the cryptogam grows on the surface of the mucous membrane, it may be either purely superficial or be inserted in a wedge shaped manner into the parenchyma. In the one it is simply attached *en masse* to the flattened epithelium, and is homogeneously striated in appearance. In the other, where it penetrates deeply into the epithelium, the growth is denser and more granular ; and the microscope sometimes fails to demonstrate the rod-like cells. Heryng believes that this obliteration is caused by the pressure.

When the mycosis enters still deeper into the crypts, the latter become dilated and filled with the fungus growth and degenerated epithelium. Staining with iodine clearly brings out the thread-like bodies colored blue, and also the masses of amorphous matter.

When situated in any portion of the fauces, mycosis is almost without subjective symptoms. It produces no inflammatory action, and is rarely attended by soreness or pain. The symptoms, if any, are almost entirely mechanical. As the plant increases and becomes scattered over a larger area, the movement of the pharynx may become somewhat restrained, the muscles slightly stiffened, and partial dysphagia may be the result. Occasionally, too, a slight irritable cough may be produced, but these symptoms are never very marked.

The disease sometimes occurs in persons possessed of ordinarily good health ; although Damaschino says that impaired general health is a predisposing cause. The most frequent site of mycosis, and where it presents the largest development, is in the crypts of the faucial tonsils, next in the lingual tonsil, and next in the pharyngeal tonsil. Siebenmann and Schubert both recite cases in the latter region ; but the growth in their cases was *aspergillus* instead of *leptothrix*.

In reference to its occurrence in the larynx I have only been able to find one case recorded. This was exhibited at the meeting of the London Laryngological Society in April, 1895, by Havilland Hall. It occurred in a man fifty-two years of age, and was situated on the left arytenoid cartilage. It was said at the meeting to be the first case on record.

Mycosis when examined presents small milk-white, opaque masses, projecting above the mucous membrane. They are soft and moist in appearance, though not easily removed. Usually a number of the plants are scattered over the area affected, varying in size from a pin's head to a millet seed or larger. There is no inflammatory areola around them.

The cheesy masses frequently found in the crypts of the tonsil differ from mycosis in being more fatty, yellower in color, and more easily removed ; while in the latter, tearing the growth away is invariably followed by slight hæmorrhage.

Mycosis left to itself, while it develops slowly, is a continuous disease, and often lasts for years. Bosworth says it might persist for a life time. While in the pharynx it develops no positively dangerous tendencies, except the gradual extension of the disease and the resultant depressing effect upon the general health. When in the larynx, however, it may be both formidable and dangerous if allowed to pursue its course unchecked.

The treatment consists in the eradication of the plant. In a few recorded cases this has been done with facility ; but in the majority careful and vigorous treatment has been required, and this has had to be persisted with in many cases for a long time before complete cure has been obtained. Tr. iod., tannic acid, arg. nit., sol. bichlorid., calomel insufflations, have all been used with more or less efficiency. Cauterization with chromic acid has its advocates and also curettage ; but the galvano-cautery carefully applied to each fungoid deposit is generally acknowledged to be more positive in its results than any of the other methods of treatment.

Personally, during a period of nine years devoted to throat practice, I have only seen two cases of faucial mycosis. One patient was a man aged fifty years. The disease was situated upon the right tonsil and base of the tongue, and it took nearly a year to eradicate it. After running the gamut of nearly all the methods of treatment, it finally succumbed to repeated applications of the galvano-cautery needle. This occurred about four years ago, and there has been no return. The other patient was a woman aged about forty years. Hers was situated on the right tonsil and pharyngeal wall. A cure was effected in a much shorter period by repeated applications of the nitrate of silver points.

The case of intra-laryngeal mycosis, which is the title of this paper, as it presented many points of interest, may be worthy of detail.

On April 2, 1897, Mr. H. B. C., a high school student, aged 19 years, of healthy parentage, was kindly referred to me by Dr. Nichol, of Cookstown. He was quite well until January last, when he took cold, which settled in his throat and lungs. Has been coughing more or less ever since, chiefly night and morning. Would often cough for half an hour or so continuously. Commenced to lose his voice about six weeks before the time mentioned. There

was a good deal of expectoration during the twenty-four hours, but not nearly as large an amount as would be expected from the amount of coughing done. Has severe pain in larynx after coughing, but no pain in swallowing, although sometimes there was slight dysphagia. Sleeps poorly, appetite poor, no night sweats.

Examination: At 11 a.m., pulse, 100; respiration, 19; temperature, 99.2°; weight, 140 pounds; spirometric pressure, 150 cubic inches. Had irregular hæmorrhagic septum and elongated uvula. The vocal cords and arytenoids were hyperæmic, probably owing to the continuous coughing. On the left ventricular band, near the centre and posterior end, there were several white spots projecting above the surface. One appeared to be as large as a small grain of wheat. There was also one white spot on the right ventricular band, in front of the arytenoid. Repeated and careful laryngological examinations, at different sittings, failed to find similar spots in any other locations. There was no areola round any of the spots, neither could I find any other lesion of the mucous membrane. The patient attributed the laryngeal pain to the rasping effect of the continuous, harsh coughing; and there was little doubt that the cough itself was produced to some extent at least by the irritated effect of these intra-laryngeal growths. Although the patient had a long neck, the larynx as a consequence being deeply seated, laryngological examination was not difficult, and the spots seemed to be exactly similar to those in the cases of faucial mycosis I had previously seen.

Examination of chest: Right anterior thorax flat, left round and full. Prolonged expiratory murmur over right apex anterior and posterior. Percussion sound on right side dull, left normal. Basic rales over both lungs anterior and posterior.

The following day I had the sputum examined by Dr. Anderson. He reported it loaded with streptococci, but without tubercle bacilli.

The lung treatment that I ordered throughout consisted in the administration of creosote and cod liver oil internally, together with menthol and creosote inhalations twice daily at my office.

After removing a portion of the uvula, the throat treatment for several days was by sprays only. The cough was slightly relieved, but there was no change in the spots. On the fourth day, after applying cocaine, I rubbed them with a 50 per cent. solution of lactic acid. This was repeated three days later. Neither application was attended, however, by any perceptible result.

On the ninth day I fused chromic acid on the end of an alumi-

nium laryngeal applicator, and after applying cocaine, cauterized several spots with it. Two days later this treatment was repeated; but on examining the larynx on the morning of the thirteenth day, I found the spots of mycosis much the same as they were on the first day of examination.

I next tried the effect of brushing them with a 10 per cent. solution of Arg. nit. Here again the result was nil. Whatever effect the various applications might have had upon the surface for the moment, the leptothrix seemed to develop a greater vegetative power by the stimulation it received.

At last I resorted to the galvano-cautery. After applying a 15 per cent. solution of cocaine, the larynx was under complete control, and the epiglottis standing erect and not interfering with vision, the galvano-cautery needle, at a bright red heat, was passed into three of the spots. Several days later this was repeated on the remaining spot on the left ventricular band and the solitary one on the right. The spray treatment was continued as usual; and in a few days the sloughs from the operations disappeared. The patient remained in the city for several weeks afterwards, and up to that time there was no return of the mycosis. The temperature became normal; the cough ceased, and likewise the hoarseness. When he left for home three weeks ago he had gained six pounds in weight, and his spirometric pressure had increased from 150 cubic inches to 215.

One reason I have for reporting this case is the striking resemblance it bore in many ways to combined laryngeal and pulmonary tuberculosis. The age of the patient, the persistent cough, the aphonia, loss of weight, loss of appetite, increasing debility, continued fever, all pointed to tubercular disease as the probable condition. The absence of tubercle bacilli on first examination of sputum, even when tuberculosis is undoubtedly present, is not by any means unusual, and therefore cannot be taken as an infallible guide. In this case a second supply of sputum could not be obtained, as the amount of expectoration diminished rapidly after active treatment commenced, although the cough remained with little change. The consequence was, that laryngoscopic examination was the only thing that could reveal the true nature of the disease; and nothing but direct surgical treatment could remove the disease when found.

The lesson that this history teaches is but a re-affirmation of the well-known clinical truth that all cases of laryngeal cough, more particularly when attended by hoarseness or aphonia, should be submitted to a thorough laryngological examination. This examination should in a large measure be a guide to future treatment.

NOTE.—A letter received to-day from the boy's father states that his son is quite well again, and has returned to school.

Selected Articles.

THE VICTORIAN ERA.

THE QUEEN AND THE PROFESSION.

In issuing this special number of *The Practitioner*, which is intended to be an abstract and brief chronicle of the advances made in the art of healing during the reign of Queen Victoria, I venture to add my humble tribute of congratulation to those which the whole Empire, and, indeed, the whole world, is offering to her Majesty on this unprecedented occasion. No class of the community has better cause to celebrate the glory of the Queen's reign than the medical profession, whose work has so largely helped to make it glorious. The success of that work has been materially promoted by her Majesty's enlightened patronage, and by the unfailing exercise of her influence in the cause of progress. The profession has been loyal to her, and she on her side has been loyal to it, and among its members she has found some of her most trusted advisers and most valued friends. At a very early period in her reign she gave a striking proof of her staunch loyalty to a faithful physician in defiance of popular clamour, and throughout her life she has been remarkable for the constancy and fulness of her trust in the medical counsellors whom she has honored with her confidence. Her Majesty has, in fact, always been in all respects, as the late Dr. John Snow said of her, "a model patient." In the mouth of a doctor this is the highest praise that can be given, for it implies qualities, not only of character, but of intellect, which are rare in any station in life, and which one hardly expects to find in the occupant of a throne, accustomed to be waited upon with bated breath and whispering humbleness, to have every wish gratified and to be humored in every caprice. It is not the least among the many proofs which the Queen has given of her fitness to rule her subjects that she has at all times been obedient to her doctors. The profession, however, unites with the nation in the heartfelt hope that it may be long

before her Majesty has occasion to practise this particular virtue more than is needful for the preservation of her health.

MEDICINE IN THE VICTORIAN AGE.

Queen Victoria's reign has already extended over two generations of men as the mere lapse of years is reckoned. Measured by the growth of human knowledge that has taken place within that period, these six decades are more than all the countless centuries before them. Medicine in particular has passed from the darkness of chaos and old Night into the dawn of a quickly-brightening sunrise. It is not a mere enlargement of the realm of Medicine that has occurred, but a revolution. With such swiftness has the change been accomplished that there are still among us men whose span of professional life bridges over the whole gulf between the past and the present. Sir William Jenner became a qualified practitioner of medicine in the very year of the Queen's accession; Dr. Wilks's reminiscences, published in this number of *The Practitioner*, go back to a time when medicine was as little of a science as metaphysics, and surgery was a rude and very ungente art; Sir James Paget had been in practice for several years before anæsthesia was discovered; Lord Lister, Mr. William Cadge, of Norwich, and Dr. William Squire, of London, witnessed the first operation performed on a patient under the influence of ether in this country; and Dr. George Keith, of Edinburgh, took an active part in the first experiments with chloroform. So rapid has been the development of medical science that to men who left the schools twenty or even fifteen years ago, and have not since kept themselves abreast of the scientific movement, much of the language of modern writers is unintelligible; if they "walked the hospitals" once more, they would find themselves in a new world. So recent, indeed, is the birth of much of our knowledge that several of the most important advances indicated in the following pages are recorded by men who largely helped in their accomplishment.

MEDICINE 'TIS SIXTY YEARS SINCE.

To appreciate the progress which has been made in every branch of the healing art during the Queen's reign, the reader should try to carry himself back in fancy to its beginning. Only a few of the main points can be indicated here. In 1837 physicians were almost without instruments of precision. The stethoscope had, indeed, been born into the scientific world some years before, but it was still in its infancy, and was, indeed, chiefly used by superior

persons who had been to Paris, like "the young man in Boston town" of Wendell Holmes's ballad. But the thermometer, the laryngoscope, the ophthalmoscope, the sphygmograph, as yet were not; the microscope was but a toy; pathology could hardly be said to exist, and physiological chemistry was but a dream. The floors of hospital wards and out-patient rooms were slippery with blood shed by the lancet; and John Abernethy's eternal blue pill and black draught constituted the greater part of therapeutics. Of nervous diseases nothing was known; diseases of the heart were only beginning to be recognized; and a large number of diseases which have now been differentiated were grouped together under designations of learned length and thundering sound, but signifying nothing. A patient with a growth in the larynx had to resign himself to death by gradual suffocation. A man would carry in his bladder a stone weighing half a dozen pounds rather than submit to the surgeon's knife. Hospitals were ravaged by pyæmia, septicæmia, erysipelas, and gangrene; the operating theatres were in appearance, and too often in reality, little better than shambles. That this picture is not too highly colored is shown by the following extract from the introduction to Liston's "Practical Surgery" (second edition, London, 1838):

Were the recommendations given above better followed, we should have presented to us fewer of those scenes so shocking to humanity, which have been well described by one of the most interesting writers on surgery: the operators are there represented as agitated, miserable, trembling, hesitating in the midst of difficulties, feeling in the wound for things the position of which they had not understood, turning round to their friends for that support which should come from within, holding consultations amidst the cries of the patient, or even retiring to consult about his case whilst he was bleeding, in great pain, and awful expectation.

This was in hospitals where the surgeons had all appliances then believed to be necessary, and plenty of skilful assistance. Of country surgery we get a curious picture from "The Memoirs of Dr. Blenkinsop," written by himself (London, 1852), describing the first time in which he had to go to an amputation with his principal. He relates that the latter said to him as they were riding across country:

In this kind of practice it is necessary to have our instruments well secured; you see I have mine strapped fast around my body. I lost them once when I was going to amputate an arm; but I sharpened a cheese knife and borrowed the carpenter's saw, and got through it pretty well.

The nursing of the sick in private practice as well as in hospitals was left to women of a type which is scarcely caricatured by Dickens in his *Sairey Gamp* and *Betsy Prig*. In the matter of sanitation darkness was upon the face of the deep. Few physicians had given attention to the means of preventing disease, and by the profession as well as by the people plagues and pestilences were looked upon as something mysterious and altogether beyond man's control. It was not until some time after the beginning of the Queen's reign that the idea of checking the spread of disease and bettering the health of the people by legislation took practical shape.

OUR PROFESSIONAL FORBEARS.

The practitioners of medicine in 1837 were, for the most part, of a type that is now utterly extinct. If many of the physicians, such as Sir Henry Hallford, Sir Henry Holland, and Dr. John Elliotson (Thackeray's "Dr. Goodenough") were men of high culture and considerable practical knowledge of disease, the majority of them appear to have been little better than pompous pedants. The surgeons were, as a class, rough in manner as well as in speech. Dr. Wilks gives a graphic picture of them in his article in the present number of *The Practitioner* (see p. 586). It would be impossible at the present day for a hospital surgeon to exhibit the skull of an ape in the operating theatre with the object of suggesting a resemblance between the cranial conformation of the animal and that of a colleague, as Liston is said to have done behind the back of Syme when he was lecturing. Operators of the type of "Mr. Slasher" are as much things of the past as the amputating knife like a sword which Professor Lizars used to flourish. The medical student of the present day is almost as different from the Bob Sawyers and the Ben Allens of the Thirties as a High Church priest is from Parson Thwackum.

In justice to our professional forbears, it must be remembered that they had not the manifold advantages which we at the present day enjoy. The ancillary sciences were little cultivated, and hardly any means of research were available. The practice of medicine, as distinguished from "physic," was just emerging from the condition of a trade. Only twenty years before the Queen's accession very few general practitioners had any diploma or technical qualification whatever. Teaching, where it was to be had at all, was for the most part more ornamental than useful. Examinations were a farce. Of the educative and stimulating influences so abundant at the present day there were few. There were but three medical societies of any

importance—viz., the Royal Medical and Chirurgical, the Medical, and the Westminster Medical Societies. The British Medical Association existed only in embryo, in the form of an obscure and numerically insignificant union of provincial practitioners. The proceedings of the Royal Medical and Chirurgical Society were not reported till 1836, when the Council somewhat unwillingly sanctioned the publication of abstracts of the papers read before it; these abstracts were, however, condensed to the point of uselessness. Of some of the discussions which took place at these societies an idea may be formed from the fact that in the course of a debate on cholera one learned Theban announced the discovery that the disease was referred to by Shakespeare. In proof of this he said:

“When I was at the theatre last night and saw the play of the ‘Taming of the Shrew,’ Petruchio says to Katharine, ‘You are choleric,’ and to convince myself that the actor had made no mistake, I referred to the works of Shakespeare when I got home, and I found that the word had been rendered correctly.”

Medical journals were not only few in number, but, excepting in the matter of personalities, dull and indifferently illuminating. There was a general dread of publicity on the part not only of individuals, but of corporations and societies; in these circumstances the diffusion of knowledge by journals was very difficult.

THE DAWN OF A NEW ERA.

The accession of Queen Victoria marked the dawn of a new era. The voice of reform had, indeed, been making itself heard more and more clearly for some years before, but with little practical result. The University of London, which had with difficulty survived the perils of a particularly afflicted infancy, had begun its great work in the betterment of medical education; resident appointments in hospitals which had gone by favour—or by fee—were thrown open to competition, and throughout the medical world Napoleon’s principle, *La carrière ouverte aux talents*, was coming to be recognized as essential for the progress of science and the credit of the profession not less than for the safety of the public. The spirit of scientific inquiry was everywhere quickened; the standard both of the general and of professional education was gradually raised; and men had to give some proof of fitness to practise before they were let loose on a defenceless public.

ANÆSTHESIA.

Then came the discovery of anæsthesia, which has been the most powerful single factor in the progress of the healing art during the

Queen's reign. Ether and chloroform made a transformation scene of the completest kind in the operating theatre ; where all was shrieking, struggling, confusion, and hurry, there now reigned quiet, order, and deliberation. Arms were no longer amputated at the shoulder while the operator counted, " not very slowly," *one ! two ! three !* but, on the other hand, procedures which could not have been thought of before came within the sphere of everyday surgery. Anæsthesia further made experimental research possible, and hence to it we are indebted for the greater part of the enormous advances that have been made in physiology, therapeutics, and other branches of medical science.

It is fitting that on this occasion we should gratefully recall the fact that the example of the Queen had a great influence in popularizing anæsthesia. In 1853 she allowed herself to be placed under the influence of chloroform at the birth of Prince Leopold. The anæsthetic was given on a handkerchief in fifteen-minim doses, and the administration lasted nearly an hour. The services of Dr. John Snow were afterwards greatly in request by ladies who, like the courtiers of Louis XIV., were anxious to have the same experience as their Sovereign. In reply to a lady of a particularly inquiring mind, who insisted on being told exactly what the Queen said when she was taking the chloroform, he replied : " Her majesty asked no questions until she had breathed very much longer than you have ; and if you will go on in loyal imitation, I will tell you everything." The patient showed her loyalty in the way suggested, and when she recovered consciousness the discreet Snow had vanished. It may be said without flattery that only a Queen of the most enlightened spirit would have ventured to submit to the administration of chloroform at a time when it was being denounced by fanatical divines as " a decoy of Satan." It may be added that it needed no ordinary courage to undergo a procedure which many doctors then considered extremely dangerous.

BACTERIOLOGY AND ANTISEPSIS.

Another discovery in the strictest sense " epoch-making " belongs to the Victorian age. Bacteriology has revealed to us a new world ; and the work of Lord Lister, so well set forth by Mr. Watson Cheyne in his paper published in this number of *The Practitioner*, has, so to speak, shown us how to achieve the conquest of that new world. *Vixère fortes ante Agamemnona* ; there were great surgeons before Lister. It is, nevertheless, the fact that scientific surgery begins with Lister, whose work will be remembered as the greatest

achievement of this reign of unexampled intellectual fruitfulness, when our wars and our political reforms, our laws and our literature, are forgotten.

Of the new possibilities in the domain of therapeutics that have been opened up by the discovery of antitoxins and the use of certain organic extracts I need say nothing, as the state of our knowledge on the subject is clearly described by Professor Leech in an article which will be found at p. 689. For my own part, I am inclined to believe that, although the results of these two methods have so far, on the whole, been rather disappointing, we have in them the germ of a medicine of the future which may give man a mastery over disease undreamt of but a few years ago.

SANITARY BETTERMENT.

Amongst the chief glories of her Majesty's reign must be counted the acceptance by rulers and statesmen of the great truth that the care of the health of the people is one of the first duties of a government. The gradual awakening of the political conscience to this duty and the results of this new spirit in practical legislation are shown by Dr. Seaton in another part of this issue of *The Practitioner*. The sanitarian is abroad nowadays. Statesmen have found *Sanitas sanitatum* a useful party cry. Hygiene is taught in board schools, and even vestrymen and guardians have ideas about drainage and ventilation. It should not be forgotten, however, that for all that has been done for the prevention of disease and the improvement of the public health the country is indebted primarily and chiefly to the medical profession. There is surely nothing on which we may more legitimately pride ourselves than this. The great wave of sanitary reform which began to rise soon after Her Majesty came to the throne has added largely to the wealth of the country, but it has swept away many profitable sources of revenue to the medical profession. Vast and flourishing industries have been called into being by the labors of men like Chadwick, Simon, Buchanan, and Thorne, but doctors have not been enriched thereby. The medical profession may, indeed, claim the unique distinction among all occupations that it does its utmost to make its own existence unnecessary. Yet the people, so far from being grateful, are instinctively suspicious of medical influence, and resentful of anything that seems to tend to increase it. It is a mad world, my masters!

THE WORK OF THE QUEEN'S SUBJECTS.

It has been said that her Majesty's influence has always been exercised for the furtherance of progress. It is on record also that

Prince Albert, whose enlightened mind naturally made him interested in the development of the healing art, played a prominent and useful part in the reform of medical education, and in the promotion of sanitary legislation. It must, therefore, be especially gratifying to her Majesty that in the great advance of medical science during her reign her own subjects have always been in the forefront. One need only mention the names of Bright, Addison, Graves, Charles Bell, Simpson, Spencer Wells, Lister, Parkes, and Hughlings Jackson, to appreciate how conspicuous a part our countrymen have played in the establishment of the new order of things. It is not too much to say that the work of these men and of others of less note, but scarcely of less merit, is the special glory of the reign of Queen Victoria.

MEDICAL SERVANTS OF THE CROWN.

Of all her Majesty's servants, none have deserved better of their country and of mankind than the medical officers of the Navy and Army. At the beginning of the Queen's reign our sailors and soldiers were ill-fed, ill-clothed, ill-lodged, and generally ill-cared for; and diseases due to these causes were rife among them. Now they live under conditions as healthy as any class of her Majesty's subjects. The credit of this altered state of things belongs almost wholly to the medical officers; they have set an example to those of other countries which has borne fruit in an immense improvement in the physical and moral condition of civilized armies and in the mitigation of horrors of war. The fact may here appropriately be recalled that on the death of Edmund Alexander Parkes it was said by the great Austrian military hygienist, Baron Mundy, that "all the armies of the Continent should on parade lower their standards craped."

HER MAJESTY'S MEDICAL ATTENDANTS.

I have thought it would be interesting at this time to give a list of all the members of the medical profession who have during the Queen's reign held appointments at Court. Such a list has never before, as far as I know, been published. It will be found at p. 572. I may state that it is published with the sanction of Her Majesty, who was graciously pleased to give instructions to the officials, in whose keeping the records of such appointments are, to give me every assistance. It is only right to state, however, that without the help of Sir James Reid, Her Majesty's Physician-in-Ordinary, the list would not have been so complete or so accurate as it is. Sir James personally took a great deal of trouble in the matter, and I

take this opportunity of tendering him my warmest thanks for his kind and efficient assistance, and for much valuable information.

It should be added that most of the appointments are merely titular. Of the three Physicians-in-Ordinary appointed at the Queen's accession, Sir James Clark was the only one who had medical charge of Her Majesty. This duty he performed for many years. Sir William Jenner, who was appointed Physician-in-Ordinary in 1862, gradually took over the duties of the office before Sir James Clark's death, and he continued to be the acting Physician-in-Ordinary till Sir James Reid succeeded him in that capacity in 1889. Before Sir James had personal charge of the Queen, Her Majesty and the Royal Family were frequently attended for minor ailments by Mr. Brown at Windsor, and by Dr. (afterwards Sir William) Hoffmeister at Osborne, who were respectively the Surgeon-Apothecaries at those places. For a few years before Sir James Reid's appointment the Queen had a resident medical attendant, the late Dr. William Marshall, who acted under Sir William Jenner. Dr. Marshall was not, however, on the list of the Queen's physicians. Of the long list of surgeons on the list Her Majesty has not, I believe, had occasion to consult any but Sir James Paget, except once when she was attended by Sir Joseph Lister. In all her confinements the Queen was attended by Sir Charles Locock; Sir James Clark and Dr. R. Fergusson were present on each of these occasions, but took no part in the management of the case. On the last two occasions (1853 and 1857) the late Dr. John Snow administered chloroform. It will be seen, therefore, that although the list of Her Majesty's nominal medical advisers is a formidable one, she cannot be said to have suffered many things from many physicians.—*Editorial Comments, The Practitioner, June, 1897.*

A LIST OF PHYSICIANS AND SURGEONS, ETC., WHO HAVE HELD COURT APPOINTMENTS.

This list is, with the Queen's sanction, supplied officially by the Lord Chamberlain's Office, and has been corrected and supplemented from other sources; but, as the records of the Court medical appointments were not accurately kept during the earlier part of Her Majesty's reign, there may be some minor inaccuracies about that period. In all essential respects, however, the list is correct.

Asterisks are placed against the names of the present holders of the various offices.

Physicians-in-Ordinary.—1837-1870, Sir James Clark, Bart., K.C.B., M.D. 1837-1844, Sir Henry Hallford, Bart., M.D. 1837-

1852, William F. Chambers, M.D. 1852-1873, Sir Henry Holland, Bart., M.D. 1861-1862, William Bayly, M.D. 1862-1897, Sir William Jenner, Bart., G.C.B., M.D.* 1870-1882, Sir Thomas Watson, Bart., M.D. 1873-1888, Sir George Burrows, Bart., M.D. 1882-1887, Wilson Fox, M.D. 1887-1890, Sir William W. Gull, Bart., M.D. 1888-1897, Sir Edward H. Sieveking, M.D.* 1889-1897, Sir James Reid, K.C.B., M.D.*

Physicians Extraordinary.—1837-1852, Sir Henry Holland, Bart., M.D. 1837-1858, Sir James Macgrigor, Bart., M.D. 1837-1859, Richard Bright, M.D. 1837-1875, Peter M. Latham, M.D. 1837-1874, Neil Arnott, M.D. 1857-1864, Robert Ferguson, M.D. 1859-1861, William Baly, M.D. 1859-1870, Sir Thomas Watson, Bart., M.D. 1861-1862, Sir William Jenner, Bart., G.C.B., M.D. 1869-1882, Wilson Fox, M.D. 1870-1873, Sir George Burrows, Bart., M.D. 1873-1887, Sir Wm. W. Gull, Bart., M.D. 1873-1888, Sir Edward H. Sieveking, M.D. 1874-1889, Charles J. B. Williams, M.D. 1875-1882, Sir James Alderson, M.D. 1875-1888, Arthur Farre, M.D. 1882-1889, George Owen Rees, M.D. 1887-1889, Sir James Reid, K.C.B., M.D. 1888-1897, Sir Richard Douglas Powell, Bart., M.D.* 1889-1896, Sir George Johnson, M.D. 1890-1897, Sir Richard Quain, Bart., M.D.* 1890-1897, Sir Alfred B. Garrod, M.D.* 1896-1897, Samuel Wilks, M.D.*

THE CURE OF HEPATIC ABSCESS BY ABSORPTION WITH ILLUSTRATIVE CASE.*

BY SURGEON-MAJOR W. B. BROWNING,
Madras.

WITH reference to the title of my communication on the agenda, I wish, as a preliminary, to explain the circumstance under which I was induced to bring the subject to your notice. In looking up the literature of the subject, I was struck with the scantiness and unsatisfactory nature of the recorded cases—indeed since the days of Morehead, the material added has been small. I have made a fairly exhaustive search, and have in this paper compiled such material as I have found for the convenience of others.

It occurred to me, therefore, that a useful purpose might be served if the present case, in itself an interesting one, were the means of opening a discussion, and thus obtaining the recorded opinion of the members, on the general question. With increased accuracy in diagnosis, and with the post-mortem records of our hospitals, there are doubtless cases of this kind recorded; but, like much other valuable information, it lies buried in our hospital archives, where it will lie till hospital registrars are appointed.

Case.—C. R. consulted me on the 16th August of this year. He complained of markedly localized pain over the *left* costal arch; the pain was intermittent in character, and was affected by posture; when lying down there was merely a dull ache, and even at times complete freedom from discomfort; the erect posture, deep inspiration, and the ingestion of cold fluids increased the pain. On inspection, the *right* side over the hepatic area was relatively more prominent, and the intercostal spaces appeared fuller than on the left; over the right lobe there was nothing abnormal detected, or complained of. Turning now to a closer examination of the painful site and its surroundings; the pain was referred to an area corresponding vertically to the cartilages of the seventh, eighth, and ninth ribs,

*Read before the South Indian Branch of the British Medical Association, 18th December, 1896, and reproduced in the *Record* by request.

and transversely from the costal margin outwards about two inches; so far as could be ascertained by percussion, there was dullness over all this area, as also in the epigastrium, occupying the upper two-thirds of the space between the navel and the ensiform cartilage; I may say here, however, that the tenderness on percussion, rigidity of the muscles, with the well-known variability in the size of the left lobe, all tended to obscure the diagnosis so far as enlargement was concerned. On palpation the tip of the cartilage of the ninth rib on the left side was found to be unconnected with the others; there was no history of injury; no friction sound could be detected over the above area, but a bruit was easily developed in the epigastrium on slight pressure. The respiratory murmur was normal over both bases, temperature 98° mid-day, pulse and respiration normal, tongue clean and moist, motions not deficient in bile, no general appearance of illness. Beyond, then, this localized pain, and a probable enlargement of the left lobe and a possible fulness over the *right* side, there was nothing to guide one except the previous history; and to which I would invite your particular attention, as it has an interesting and important bearing on the case.

The patient, a man of abstemious and active habits, came to India in 1881, and enjoyed excellent health until the autumn of 1891 and spring of 1892, when he had what he designated as "liver" for about four months on and off; from this he appears to have "completely recovered." In August, 1892, he had another attack, after which he went to England for three months and became quite well. In August, 1893, he became again ill with "liver and remittent fever"; he was invalided to England, where he remained fifteen months. In England, in the months of June and July, 1894, he had another attack of "liver," from which he "completely recovered" and returned to Secunderabad in October, 1894, where he stayed until posted to our hill station, Ootacamund, in June, 1895. On his arrival at Ooty he developed "congestion of the liver," not sufficiently bad apparently to confine him to the house; with this exception, both at Secunderabad and Ooty, he enjoyed the best of health; he entered into all the sports of both places, hunted and played polo, etc., and, according to himself, "never felt better in his life."

In the foregoing history I would draw your attention to the fact that the patient was ten years in India and was never seriously ill; that he then had what one colloquially calls "liver" in 1891; again in 1892, 1893, 1894, and 1895, and that between the attacks he was, so far as his feelings were concerned, perfectly well.

History of present illness.—This commenced quite suddenly on the night of July 26, when he got wet and chilled out driving, and next day complained to his then medical attendant of fever, pain over the arch of the ribs left side, and an occasional ache in the left shoulder, which, to use his own expression, “connected with the pain over his left side. The stools were also deficient in bile. He was confined to bed for over a week ; the above symptoms subsided, his temperature was said to have been normal, and he returned to out-door life, but the pain which had never quite left him returned, and he then came under my care with the symptoms before mentioned.

At this time, August 16, I made a mental provisional diagnosis of peri-hepatitis with adhesions, connected with old liver troubles. His temperature was taken, and a regular evening rise to 100.5° , on the average, was found to be present. The history from August 16 until September 26, when I left Ooty, I summarize as follows : Generally speaking, matters continued in a state of *statu quo ante* ; there was practically no improvement, the pain continued much the same, with this exception, that he could move about with greater comfort and drink cold fluids ; there had been a constant evening rise of temperature to 100° , being generally normal in the morning ; pain in the left shoulder, to which I have before referred, returned for a short time ; he became thinner, and lost color and appetite. He had a change to the plains, Coimbatore, which effected an improvement ; his pain became less, his appetite better, and his temperature fell to an average of 99.5° , at which it remained after his return to Ooty until he incautiously exposed himself to a fresh chill, and had an exacerbation of all his symptoms. Towards the end of September he had several curious “spasms of pain” ; these came on quite suddenly, were referred to the epigastrium ; there was a “horrible sensation of tightening,” and fear of impending dissolution ; the longest attack lasted two minutes. There had not been any change in the scanty physical signs during all this time, but my original impressions had further developed, and I considered that actual suppuration must be present, and that further measures would sooner or later have to be adopted. On September 13 I explored him with a fine needle under the costal arch with a negative result. On September 17 I asked Dr. Branfoot to see him in consultation with me ; he concurred with my view of the local condition. As I was leaving the station I did not elect to take any further measures then, neither did the patient wish it ; he was advised to leave the hills with as little delay as possible. I saw him

again in Madras on October 16 ; there was no further change in the physical signs except that he was very much thinner. The hepatic area on the right side looked more prominent than before ; he had suffered severe pain from the effects of the railway journey, and altogether looked worse. I decided to operate.

Operation.—Assisted by Dr. Branfoot, on the morning of October 20, I opened the abdomen in the epigastrium in the median line, through a three-inch incision. The right lobe was visible, and appeared healthy. There were no adhesions, the surface was smooth, shining, and exhibited no signs of pressure from behind. The falciform ligament, which was found to the left of the incision, was now cut across, and over the liver corresponding with the edge of the left costal arch small, white specks of recent lymph were visible ; on passing my finger in under the costal arch, firm adhesions were found about one inch or more inside the edge of the arch, and occupying about three or more inches vertically ; the liver in this situation was doughy, and retained the impress of the finger ; very marked pulsation of the left lobe was also noticed, probably cardiac. It was now evident that further examination could be carried out more easily from an incision parallel, and close to the costal arch ; the upper and lower ends of the first incision were therefore closed, another three-inch incision, which cut through the rectus muscle, made along the arch commencing from the middle of the first incision. The stomach could now be seen and some intestine, but no adhesions in this direction ; the finger was passed under the left lobe towards its left border, and it was then further evident from the thickness of the organ in this direction that one had an abscess or new growth of some kind in the left lobe : no very detailed examination was considered advisable or necessary in this direction. I now passed a needle into the left lobe ; the first two punctures were blank, at the third, under the arch, and about one-and-a-half inches from the surface, the needle grated on a hard substance which was punctured, and, on withdrawing the piston, very thick pus welled slowly up. I may remark here that the pus drawn at this time, and subsequently, was so very thick that in the sterilized fluid in the syringe it lay in coils for quite a considerable time.

Commencing at the lower end of the adhesion I now stitched the liver to the peritoneum lining the abdominal wall ; this was fairly satisfactorily done, until the upper part of the incision was reached ; here the sutures cut through the liver tissue when the slightest tension was applied ; a second row of interrupted sutures was then put in. I now tried with several different-sized needles to

again strike the abscess ; but, although I grated against the capsule more than once, I failed to find pus. I passed a bistoury into the liver, and with a dressing forceps enlarged the opening, still with no result ; the hæmorrhage was now sharp, the patient had been a considerable time under the anæsthetic, and one felt that there was a danger of tearing through the sutures, so it was deemed advisable to suspend further operations. The wound in the liver was plugged with iodoform gauze, and the parts dressed in the usual way. No ill results followed the operation, and the patient rallied from its immediate effects very well. The dressing was removed 92 hours later, and then, commencing to the left of the opening in the liver, I passed a long fine needle into its substance upwards and outwards, and about $1\frac{1}{2}$ inches from the surface I struck the capsule, which was so hard here that on mere pressure the needle rebounded from it ; with a gentle boring motion I got into the cavity, and then passed a Pollock's knife down by the needle ; not being sure of the extent of the abscess, nor of the exact situation of the surrounding parts, I made a comparatively small opening ; I passed a director into the abscess cavity with a view of ascertaining its size, and was surprised to find that it extended far beyond the confines of the liver ; passing upwards, outwards, and backwards, the cavity extended at least six inches. A portion of No. 7 catheter was passed into the cavity to act as a drain, and alongside of it a piece of fine sea tangle. Regarding the tangle, I subsequently used two other pieces until I had the opening dilated sufficiently large to receive two large pieces of drainage tube. The dilatation with the sea tangle caused the temperature to run up to 103.8. The pulsation before-mentioned ceased at once when the abscess was opened, and the pain, the most prominent symptom all through, was at once entirely removed. An anæsthetic was not used when the abscess was opened, and the patient experienced no pain.

The discharge was of the usual type, but for the first day *very* thick, as before remarked ; it was subsequently examined microscopically ; nothing out of the common was detected.

The subsequent history does not present anything unusual, except that the temperature did not fall as satisfactorily as is usual.

On the 4th November a faint pink tinge was noticed in the sputa, which developed during the night into distinct hepatic pus ; this had been anticipated for a week before, as the usual physical signs were present ; the quantity spat up was collected, and measured about four drachms ; the cough, which had been troublesome for the preceding week, ceased after this, and the temperature fell to

normal. It rose again on the 15th November, and coincident with the rise the discharge, which was by this creamy pus, became more profuse, thick, discolored, and curdy.

He left for England on the 25th November, still wearing a large drainage tube, which I fear he will have to wear for a considerable period, as the firm adhesions and non-collapsible walls must mean a prolonged suppuration.

Remarks.—I think there cannot be any doubt that this was a case of an old hepatic abscess, dating back to 1891 or 1892, which had to a certain extent become encapsuled and then absorbed; the history points to this conclusion, and the hard capsule admits of no other explanation, unless possibly that of suppurating hydatid; there is nothing to suggest this latter, and no hooklets were found. But this abscess was more than an encapsuled abscess, as seen by the size of the cavity. Was there another abscess that had communicated with the encapsuled one, or had the latter worked its way outwards, forming a larger abscess between the diaphragm and liver? I think the latter is the more rational explanation.

We have all seen cases of so-called hepatitis, in which differences of opinion have existed as to the presence or otherwise of pus, and in which the patient has been sent to Europe; he recovers, and some say with an "I told you so" sort of air that no abscess could have existed, and that exploration recommended, perhaps, was unjustifiable. In some of such cases chloride of ammonium has been given, and a small few, therefore, some years back, looked upon it as a sort of specific. But there is a further phase of these cases, and one to which I would specially draw your attention: a variable period after their return to India they again become ill, again they go home, get well only to get ill again on their return, until finally they either sever their connection entirely with this country, or they return once too often, remain too long, and develop an hepatic abscess. The case I have read to you exemplifies this type fairly well; most of us have seen such cases, and I think I am correct in assuming that we look upon them as cases of encysted hepatic abscess, which become partially cured and quiescent on leaving the tropics, but which under given conditions light up again. Although, as I say, most of us recognize this train of events, yet nowhere have I seen the inference therefrom recorded in a definite form.

Fayrer describes the sequence of events, but apparently puts a different interpretation on them; he says that some individuals "seem to be so *susceptible** as to be totally unable to tolerate the

* The italics are mine.

climate, and, though perfectly healthy in temperate latitudes, become affected by liver disease directly they return to India " ; he says that he has been compelled to invalid officers on this account.

Another possible explanation of such cases that has occurred to me is that there may be cases in which liver inflammation *short of suppuration* occurs, the result being a damaged tissue prone to again undergo inflammation under given conditions ; this idea is entirely based on analogy ; take, for instance, the familiar example of pelvic inflammation in women ; they recover from it in many cases most completely, but one knows what a smouldering fire exists, and how apparently trivial causes set alight the old troubles, and a most violent inflammation results. Why should not the same occur in the case of the liver ?

As to the general question of encapsulment and absorption of hepatic abscess, the following is all I have been able to find. Morehead says that cases occasionally present themselves in which the existence of abscess has been undoubted, and in which the fluctuating swelling gradually lessens and finally disappears without any appreciable discharge, and he says that this inference regarding cure by absorption is further strengthened by post-mortem examination ; I cannot accept the first part of the above as in any way conclusive, and I more than doubt the possibility of an abscess which appears as a large " fluctuating swelling " being absorbed ; he, however, gives three cases in which post-mortem examination " showed hepatic abscess in process of absorption " ; two of these appear to me to be open to doubt ; the third appears to have been a clear case of the kind. Dr. Nicoll, in the *Madras Medical Journal*, Volume III., records a case of spontaneous absorption of a very large abscess ; there is no record of the stools, etc. In the same journal, Volume VI., Dr. Innes records a case in which, when the propriety of puncturing a large fluctuating abscess was under consideration, it disappeared. Waring records this as a case of cure by spontaneous absorption. In the *Medical Times Gazette* for 1884 a case of this kind is also recorded. Frerichs says that the question is one to which it is difficult to give a positive answer ; analogy is in favor of the possibility of such occurrence. In Murcheson, whose section on tropical abscess has been edited by Sir J. Fayrer, it is stated that small tropical abscess may exist for years in a quiescent form, and then undergo enlargement, and burst. Fayrer, in his work on tropical diseases, says : " There can be little doubt that abscesses may be absorbed ; the symptoms during life pointing to the formation of matter have in a few exceptional instances subsided, and all

signs of mischief disappeared with restoration to health, leaving it almost certain that an abscess had formed, and then spontaneously disappeared." Sir Joseph apparently writes from his own large clinical experience, but does not appear to have an opportunity of verifying his opinion of such cases either by dissection during life, or post-mortem.

Virchow, as quoted in Ziemsen, says that "reabsorption of the fluid contents occurs ; interstitial tissue develops ; a cheesy or calcareous mass develops with a capsule of cartilaginous consistency." This only occurs, he says, in small abscesses. McPherson says, in Quain's Dictionary : "There is a strong *presumption*†

† The italics are mine.

that liver abscess is occasionally absorbed, and also that it may remain latent for a long period" ; and, again, "In some cases where there has been a strong presumption that the abscess had existed for four or five years, the walls have been found much thickened and almost cretaceous" ; he does not appear to quote any case within his own experience. Maclean also mentions the possibility of hepatic abscess becoming partially absorbed and encapsuled ; he gives a very gloomy prognosis of such cases from the fact that they rupture suddenly and unexpectedly ; cases of hepatic abscess shown to us at Netley, in which there was a thick capsule, admit of other explanation ; as far as I can recollect, they had all opened into the bowel. Budd speaks of encysted abscess, and mentions the case of a colleague of his who had, he says, "his liver studded with abscesses, but was still competent to do all the duties of profession." *Indian Medical Record.*

Clinical Notes.

CENT IN A CHILD'S ŒSOPHAGUS FOR NEARLY TWO MONTHS—SKIAGRAPH—REMOVAL.

BY DR. EDMUND E. KING,

TORONTO.

THE patient, a bright child between three and four years of age, was playing on the floor with a cent and some toys. When the child was picked up the cent could not be found. The possibility of the child having swallowed it was thought of and an emetic given, but without result. On examination it could not be located, and it was thought that if the child had swallowed the coin it would pass into the stomach and out *per via naturalis*. The little one refused solid food. Would take liquids very sparingly, and swallowed with great difficulty. A part of liquid would regurgitate. She vomited frequently. This state of affairs continued for about two months. She lost flesh and was failing fast. I made a skiagraph of the child's neck and located the coin. It showed distinctly on the left of median line, about on a level with the articulation of third rib and sternum. It was removed with very little difficulty. The child made an uneventful recovery. The time of exposure was four minutes and the resulting skiagraph very satisfactory.

61 Queen street east.

THREE CASES OF POISONING BY METHYL BLUE.

BY A. J. HARRINGTON, M.D., M.R.C.S., ENG.

TORONTO.

SEEING the report of the successful treatment of gonorrhœa in the B.M.J. of January 16, 1897, by James Moore, of Belfast, I adopted his plan and was exceedingly pleased with it on the small number of cases in which I gave it a trial. His prescription was :

Methylene blue, grs. iij.
Potas. citrat, grs. xv.

To be administered three times a day, followed later on by an astringent injection of alum, three grains to an ounce of water three times a day.

On May 23 R. J. came to me with an acute attack of gonorrhœa. and I prescribed thusly :

Methyl blue, grs. iij.
Potas. citrat, grs. xv.
First konseal, mitte xii.

One three times a day.

This prescription was put up by same dispenser, and the patient took the first konseal at 2 p.m. and at 5.30 p.m. he had rather a distressing attack of vomiting. He came over same night, and explaining his condition, I concluded it had resulted from an irritable condition of his stomach, and advised him to continue his medicine. Saw him again on 28th, and he said he had faithfully tried and could not retain them, and that they purged him very much. I then made an investigation and found that the chemist had gotten a fresh supply of aniline, and that the new stock he had purchased was Merck's methyl blue (pyoktanin) and not methylene blue at all. In my first prescription I had written out the prescription in full, methylene blue, but in the latter and in cases two and three, which had similar symptoms, I had abbreviated and written methyl blue, not thinking that methylene blue was an entirely different preparation from methyl blue or pyoktanin.

Cases two and three were similar, main symptoms being vomiting and diarrhœa.

BROMOFORM ANÆSTHESIA.

BY JAMES WALLACE SMUCK, M.D.,

TORONTO.

THE object in presenting these clinical notes is to show the result obtained from an overdose of bromoform, which was being used as a cure for pertussis.

CASE. S.C., æt. 6, female twin, in the winter of 1896 contracted whooping cough. I decided to try bromoform, but was unable to find how best to administer it. I made the following mixture, however :

R Bromoform ʒ ii.
Aqua ad. ʒiv.

Sig. A teaspoonful every three hours during the day. (Shake well before using.)

Bromoform will not mix with water, consequently it required a severe shaking before each dose was administered.

All went well until the last dose in the bottle was reached. About eleven o'clock a.m. Mrs. S. gave the child about two-thirds of the regular dose, all that remained in the bottle.

While administering the remedy I was unable to perceive any marked benefit other than a reduction in the severity of the paroxysms. The disease may have been shortened, but after the last dose, within half an hour, the child went to sleep, and was completely anæsthetized in a few minutes. The respiration was slightly lowered, to fourteen or fifteen per minute. The pulse fell to sixty-four, but was full, strong, and regular. As I did not know what the outcome would be, I watched closely. The corneal reflex was gone. The pupil was contracted at first, and afterwards dilated as the effect deepened. There seemed no immediate danger from heart failure, and I decided to watch and wait.

In about two hours I injected thirty min. of brandy into the forearm as a preventative of heart failure.

At all times there was a strong odor of the bromoform in the breath. The reflexes of the rectum and bladder remained.

At four o'clock p.m., or four and one-half hours after going to sleep, the first signs of returning consciousness began to appear. I did not attempt to rouse her, but she wakened as from a very sound sleep, half dazed. She vomited twice, and asked for a drink of water. She remembered nothing about going to sleep, but in half an hour or so said her arm was sore where I had injected the brandy. Nothing further developed. She went to bed at her usual time that night and slept soundly until morning, when she got up as usual.

The most favorable result of all was the complete cure of the whooping cough. There was never a spasm afterwards, although a slight cough continued for two or three days, which, I think, was due to the former irritation of the bronchi. The method of dispensing bromoform was wrong, undoubtedly, and unless a good emulsion can be made to keep the drug suspended, it would be better to drop it on sugar.

I had never seen a report of a case similar to mine at this time, but since I have seen an abstract of a report by Stepp, of Berlin, I think, where a two-year-old child accidentally got 30 min. and slept for two hours, with the same result, a perfect cure of the whooping cough. I am convinced that in my case the child could not have received more than 30 min., and she slept four and one-half hours.

1. I am convinced from my observation that bromoform will lessen the severity of the symptoms in whooping cough.

2. Overdoses produce almost the same form of anæsthesia as does chloroform, with probably less depression to respiration and circulation.

3. Overdoses will cure whooping cough absolutely, but I would hesitate to try it, or to recommend the trial to others.

If any others should have a similar experience, I would recommend that the patient be kept quiet and to watch the symptoms, using such treatment as may be demanded to prevent death. I believe efforts to arouse the patient would be futile, and produce harm instead of good.

Progress of Medicine.

OBSTETRICS

IN CHARGE OF

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AND

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ASSISTED BY

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PROGRESS OF MIDWIFERY DURING THE QUEEN'S REIGN.

From the paper on the changes which have taken place in midwifery between 1837 and 1897, written by Drs. F. H. Champneys and G. Drummond Robinson; and published in the Jubilee number of *The Practitioner*, we extract as follows:

DEVELOPMENT OF THE PELVIS.

This subject is of considerable historical and scientific interest; it excited some amount of discussion thirty years ago, but has since fallen somewhat into the shade. At the foundation of the subject stand two great factors—the action of the sacrum and the counter-pressure of the femora. Before the writings of Dr. Matthews Duncan the sacrum had been described as a wedge by Cruveilhier and Dubois and Gavarett. The shape of the sacrum led to this suggestion. In 1868 Dr. Matthews Duncan showed that the only part of the sacrum which entered into articulation was not even shaped as a wedge, but that its action must be entirely different, and that the body weight was hung on the posterior iliac tuberosities by means of the posterior sacro-iliac ligaments. It followed from this that the sacrum acts as a transverse beam, transmitting the body weight to the “iliac beams” of the ossa innominata, by which it is transmitted to the femora.

THE LENGTH OF THE CERVIX UTERI IN ADVANCED PREGNANCY.

At the beginning of the present reign the current teaching was that the cervix was gradually taken up into the body of the uterus and formed part of its cavity. This was the teaching of Roederer (1759), Desormeaux, Gooch, and Montgomery, though not the older teaching of De Graaf (1677), Verheyen (1710), and others. In 1826 Stoltz insisted on the opposite and older view that the cervix never forms part of the uterine cavity during pregnancy until the onset of what is now known as the premonitory stage of labor, consisting in the canalization of the cervix beginning at the os internum. In 1859 Matthews Duncan emphasized this position, which has since that time been generally accepted. In 1872 W. Braune published plates of frozen sections of a woman at the beginning of labor, showing a freely projecting semi-circle 4 cm. above the symphysis and 2 cm. above the promontory of the sacrum. The external os, which was completely dilated, appeared as a small projection. The upper ring was called the os internum, but the difficulties of identifying this with the os internum of the unimpregnated uterus were felt. Still it was supposed that this upper ring of the full-time uterus was the os internum. In 1875-76 Bandl endeavored to return to the previous view, interpreting Braune's plate by saying that the part below the upper ring was formed from the cervix, which did, after all, form part of the cavity of the full-time pregnant uterus, and that the os internum of Stoltz and Duncan was not the os internum of the non-pregnant uterus. This was partly right and partly wrong, but it directed attention to this important part of the uterus known as the "lower uterine segment," which Bandl has shown to be the site of spontaneous rupture of the uterus, and which formed the subject of much controversy. It is now looked upon as part of the body of the uterus; its muscular fibres are arranged in a different fashion from other parts of the cervix and uterus; it is lined by decidua, and it is not separately represented in the unimpregnated uterus. To Bandl is due the credit of directing the attention to the lower uterine segment and insisting on its study, especially in connection with rupture of the uterus.

Anæsthetics in labor came into use in 1847 on the introduction of Sir James Simpson. This date is the same as that of Semmelweis's paper.

The axis-traction forceps was invented by Tarnier in 1877.

BIPOLAR VERSION.

This manœuvre, one of the most useful ever introduced into midwifery, was invented by Dr. Braxton Hicks. Its field of appli-

cation is very wide, as it makes version possible in all cases in which two fingers can be passed into the uterus. In no class of cases has it proved more useful than in placenta prævia, as it enables bleeding to be controlled much earlier than was previously possible, experience showing that after version, and before delivery, the bleeding ceases in the great majority of cases.

EXTRA-UTERINE PREGNANCY.

In 1835 Velpeau denied the existence of ovarian pregnancy, and Mayer in 1845 did the same. Merriman (1817), Campbell (1840), and Rokitansky (1855) expressed doubts as to the existence of primary abdominal pregnancy. In 1873-89 Lawson Tait "demonstrated the overwhelming importance of tubal pregnancy, and the conditions which might develop from it, especially the extraperitoneal development of the ovum after rupture of the tube into the broad ligament."

RUPTURE OF THE UTERUS.

Bandl's share in the elucidation of this accident, which always, when spontaneous, affects the lower uterine segment, has been mentioned elsewhere. At the beginning of the present reign the practice was to deliver in all cases by the natural passages (Ramsbotham, 1841). Since the greatly increased success of abdominal section in the Cæsarean operation, it has become the practice to remove the foetus and placenta by this method in cases where the foetus has escaped into the abdominal cavity, and to suture the uterus, as in a Cæsarean section, or to remove it. This has led to a diminished mortality, but the accident still remains one of the most terrible in midwifery.

INVERSION OF THE UTERUS.

Our accurate knowledge of the conditions giving rise to this accident is principally due to the researches of Matthews Duncan, whose classification is probably well known. It amounts to this, that the predisposing cause of inversion is never activity, but, on the contrary, always inertia, of the uterus, and that this may affect the whole of the organ or the placental site only. The exciting cause may be unskilful action on the part of the attendant; but this is not the only cause, since vomiting or straining of any kind may also produce it. Acute or recent inversion can always be easily reduced by the hand. As soon as the involution of the uterus is complete—that is, at the end of some six to eight weeks—the case becomes technically "chronic," and it is to West and Tyler Smith

(1856) that we owe our present knowledge that, however long a time may elapse after this, such an inversion may always be reduced by elastic pressure in the absence of adhesions. Previous to this, such inversions, if they could not be replaced by manual taxis, were treated by amputation. This was the practice up to some twenty years ago in London.

CÆSAREAN SECTION.

In 1841 Ramsbotham wrote: "Out of nearly thirty instances in which the Cæsarean section has been resorted to in the British Isles, in three only has it proved successful, as far as the preservation of the mother was concerned." He advises rupture of the membranes before operation, and writes: "There will be no need of sutures to bring the edges of the uterine wound together; the abdominal parietes, however, will require two or perhaps three sutures." Uterine sutures had been apparently first used in 1769 by Le Bas. Ramsbotham's advice, as far as regards absence of sutures, was followed, at least to a considerable extent, till some twenty years ago. The results of the operation were everywhere deplorable, and it was only used as a last resource. In 1882, at the suggestion of Sanger, of Leipzig, multiple sutures were used after the manner of Czerny-Lembert to the intestine, twenty in all being inserted into the uterine wound.

The mortality in 1841 was at least 90 per cent. At present, in skilled hands, it is calculated at about 12 per cent.

SYMPHYSIOTOMY.

This operation was suggested in 1768 by Sigault, a medical student in Paris. In 1777 he performed the operation, the child was saved, the mother much injured, permanent incontinence of urine also resulting. Sigault performed five operations in all, the last time in 1778, losing both mother and child. In 1866 the operation was again taken up by Morisani and Novi, of Naples, and in 1891 by Pinard, of Paris. The operation, as its name implies, consists in enlarging the pelvis by cutting through the symphysis pubis, and divaricating the cut halves of the pelvic brim. In England the operation was tried by a few operators, but never had a large following, and everywhere it seems to be rapidly falling into disfavor, an event which we long ago foresaw.

PORRO'S OPERATION.

In 1876 Porro, of Milan, moved by the great mortality of Cæsarean section, especially that caused by the failure of the union of the uterine wound, proposed and carried out successfully the

operation known by his name. This is removal of the fœtus from the uterus (the placenta not being removed) and immediate excision of the uterus and appendages after the manner of a hysterectomy for fibroids, the pedicle being treated extraperitoneally. This got over the difficulty of the uterine wound, and also the risk of hæmorrhage from failure of the uterus to contract. The results were very much better than those of the old Cæsarean section. It must, however, be remembered that Porro's operation was the first to gain the advantage of antiseptic methods, and that the improvement produced by it was very largely due to this, which has since become the common advantage of all surgical procedures. The operation had a short popularity, which was rapidly eclipsed by the new Cæsarean section.

LAPARO-ELYTROTOMY.

The object of this operation is to avoid the peritoneum, since peritonitis was the greatest cause of the mortality in Cæsarean section. Its conception is highly ingenious. It consists in opening the vagina by an incision like that for ligature of the external iliac artery in the flank, the fœtus being extracted through the cervix uteri beneath the peritoneum and above the greatly-contracted pelvis. This operation has also been abandoned in consequence of the greater success of the far more satisfactory modern Cæsarean section.

PUERPERAL FEVER.

Before 1847 there were many different views :

- (1) It was considered to be due to metastasis of the milk.
- (2) To bilious or mucous material accumulating in the bowels.
- (3) To inflammation of some part which formed a focus, from which the disease spread to other parts. Thus (*a*) metritis, (*b*) metrophlebitis, (*c*) metrolymphangitis, (*d*) peritonitis, (*e*) inflammation of the intestine and omentum were all examples of disease starting from different foci.

(4) To many different diseases, all classed as puerperal fever (Trousseau).

5. To vitiation of blood by products of decomposition (Kirkland, 1774).

6. To a fever of a special nature, like typhus.

In April, 1843, Oliver Wendell Holmes wrote on the contagiousness of puerperal fever in the *New England Quarterly Journal of Medicine and Surgery*. In 1847 Semmelweis insisted on the same view. The text on which he preached was the case of a pregnant

woman with cancer of the uterus, who was examined by the students, and became the cause of the death of fourteen puerperal women. Semmelweis also noticed that the lying-in wards which were attended by midwives had far fewer deaths and far less illness than those which were attended by students. He obliged the students to anoint their hands before touching a dead body, and to disinfect them afterwards with chlorine water or chlorinated lime before examining a pregnant woman, with the result that deaths and infection were considerably diminished.

In 1848 Tyler Smith classified puerperal fever thus :—

1. *Sporadic puerperal fever*: probably due in the first place to the absorption of irritating or putrid lochial discharges, decomposed coagula or portions of retained placenta. (This is equivalent to sapræmia or septic intoxication.)

2. *Epidemic puerperal fever*, which originates "in the crowding of puerperal women together, and in the epidemic prevalence of erysipelas, hospital fever, typhus, or other disorders allied in their nature to the puerperal disease."

3. *Contagious puerperal fever*.—He refers to the observations of Semmelweis.

In 1870 Stadtfeldt, of Copenhagen, used antiseptics in midwifery (carbolic acid) on a large scale. In 1881 Tarnier introduced perchloride of mercury. As an example of the results of antiseptics in English lying-in hospitals, the General Lying-in Hospital, York Road, Lambeth, may be quoted :—In 1877 every seventh mother died. In 1884 perchloride of mercury was introduced. From 1884 to 1893 there were only three deaths due to sepsis, of which one occurred during a time when salufer was used instead of mercury as a disinfectant, and the other two during one month in which a very weak solution of mercury was used.

Similar improvement has followed in the practice of other lying-in hospitals (Godson, *Lancet*, Jan. 23, 1897, p. 221). But no corresponding improvement has taken place in the results of the confinements of the country generally, in which puerperal fever has rather increased than diminished.

BACTERIOLOGY OF PUERPERAL FEVER.

1837. Eisenmann thought that puerperal fever was identical with surgical septicæmia.

1850. Sir James Simpson expressed the same opinion.

1862. Sieffermann, of Strasburg, suggested the presence of a germ.

1863-65. Mayerhofer described germs, but his description is not very clear.

1864. Rokitansky found germs in the lochia both of febrile and of non-febrile patients.

1869. Coze and Feltz found streptococci in the blood of infected women, but failed to cultivate them.

1879. Pasteur isolated and cultivated the streptococcus from puerperal cases. Since then many others have worked in this direction.

Antistreptococcic serum has been introduced during the last few months with encouraging results, and, so far, with no ill effects (Marmorek).

SURGERY

IN CHARGE OF

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THE PREPARATION OF CATGUT.

The many methods suggested for the preparation of catgut since Lister first made it possible for us to utilize this material for ligature and suture purposes, is at once an indication of the uncertainty of the methods which have up to this time been used, and of the readiness with which operating surgeons the world over would use it, almost to the exclusion of other materials, were a method of sterilization introduced which was both reliable and simple.

Catgut, as we receive it from the manufacturer, is and always must be septic. Made largely from the small intestine of sheep, it contains a large proportion of fat and a variety of organisms, all more or less dangerous when buried in a closed wound. The difficulty in producing a satisfactory sterilized gut has been due to, first, the fact that the bacteria are protected by the presence in the gut of a large proportion (20 per cent.) of fat; and secondly, that gut itself is a comparatively perishable article, its tensile strength being destroyed by high degrees of temperature, which exert no injurious effect upon silk. Germicides which best reach the organisms in their protected positions are heat and carbolic acid. The degree of heat necessary to destroy the pathogenic bacteria, including their spores, is not greater than 212° F. Other organisms resisting even a higher temperature than this have been found in catgut (as demonstrated by Brunner), but they are non-pathogenic and have no surgical importance in the absence of pyogenic cocci.

Thomas Keith, following Lister's lead, used catgut largely in his abdominal work. He simply wound the catgut upon pieces of sheet lead immersed in a 10 per cent. solution of carbolic acid in olive oil, and allowed it to stand for six months before using. He assured me that this method of preparation gave him thorough satisfaction. On my return from Edinburgh I prepared a large quantity of catgut and after seven years opened a sealed jar prepared in this way and found its tensile strength unimpaired; and, judging from the results obtained in the cases in which it was employed it must have been thoroughly sterile. It is not always convenient to wait six months before using gut. To avoid this delay, I have modified Keith's plan, and the results thus far have been all that I could have wished. My method is as follows: Almond oil is used; this is raised to its own boiling point (about 400 degrees), which eliminates the water, which all vegetable oils contain more or less of, and which if allowed to remain in the oil would convert the catgut into a useless mass. Some of the oil is then placed over a water bath with 10 per cent. of carbolic acid. The catgut, loosely wound on microscopical slides or Halstead's glass spools, is placed in this 10 per cent. solution of carbolic acid, in the almond oil, and kept at the boiling point of water for an hour. It is then transferred to a fresh 10 per cent. solution of carbolic acid in almond oil, which has been boiled before the addition of the acid. It might be safer to repeat the boiling once each day for three days, but I have been in the habit of using it after a single boiling, and so far have had no reason to regret it. I have used the gut prepared in this way in about one hundred abdominal sections, in intracranial work, and in what is a more severe test than either, a large amount of skin stitching. In many of the latter cases the dressings were not changed for more than two weeks from the time of the operation, and while a little redness would occasionally occur about a suture, I have had no reason to change a dressing of stitch hole abscess. Where the subcutaneous suture was employed there has been absolutely no trouble, except that now and then, in removing the dressing from an abdominal wound at the end of twelve or fourteen days there will be noticed a little redness with perhaps a slight moisture where the catgut emerges at the end (more commonly the lower) of the wound, where the sebaceous follicles dip deep down into the skin, making skin disinfection more than ordinarily difficult.

However perfect the sterilization of catgut may become, some operators will always be comparatively unsuccessful with it. One of the causes of their lack of success will be their failure to keep it

sterile after it has been sterilized. Carbolic acid is volatile, and a ten per cent. solution becomes, in a carelessly stoppered bottle, a four or two per cent. solution in a very short time. I have seen bottles of what had been well-prepared catgut become thoroughly rotten and the oil rancid through a poorly fitting stopper. Then, again, I have seen operators in tying bleeding vessels take a strand of catgut eighteen inches or two feet in length in their hands, the portion of catgut which has been wound about the hand during the tying of one vessel becomes itself tied about the following one. The force required to secure a thorough tying of the first has drawn the catgut strongly through the hand, wiping off, no doubt, some of the organisms which remain there even after a comparatively careful washing. Then, again, I have seen stitch-hole abscesses produced by the use of a needle so small that it left an opening barely large enough for the catgut with which it was threaded to follow in its wake; in its repeated passage through the too small needle holes in the skin, however carefully that skin may have been disinfected, it is almost certain to carry with it many of the organisms with which even the deeper layers of the skin are always charged. This is especially so in those localities in which we find the glands of the skin largely developed.

It has been urged that catgut must always remain an uncertain suture, because in the case of infection the catgut forms a ready path along which the organisms will rapidly travel. During the past year I have seen two cases in which the superficial wound has shown deep infection between the fourth and sixth day. In both of these cases the wound had been closed by a continuous subcutaneous catgut suture. In neither of them did the organisms travel along the line of suture. In neither of them was there any reason to suppose that the catgut more than the tissues favored the growth of the organisms. The catgut retained its strength for nine or ten days and then disappeared, having given rise to much less trouble than silk would have done under the same conditions.

The tissue necrosis in these cases, if it spreads at all, takes the course of the denser connecting tissue fibres in the fat, or if the sheath of the rectus be exposed, the course of the fibres of that fascia.

My success with catgut I attribute to thorough sterilization by means of heat and carbolic acid, to preservation of the catgut and carbolized oil by careful bottling, to care in not leaving in a wound any portion of catgut that has been handled, to the use of a needle of such a size as to enable the catgut readily to follow in its track,

to thorough drying of the edges of the 'closed wound, and to the rubbing in, after the stitching of the wound has been completed, of a powder of one part of sterilized powdered iodoform in seven parts of Squibb's impalpable powder of boracic acid. Sprinkling of the wound with this powder is not sufficient. It must be thoroughly rubbed into the surface of the wound. If the wound receives any subsequent dressing, it is washed first with pure alcohol and the powder applied as before. No aqueous solution of any kind is brought near the wound.

Many of the more recent methods suggested for the preparation of catgut will undoubtedly be found to yield thoroughly sterile catgut, such as Kœonig's sterilization by Cumol, and a modification suggested by Doctors Clark and Miller; that of Dr. George R. Fowler, of boiling in alcohol under pressure, and its modification by Jellett; that of Cunningham with Formaline, and its modification by Hofmeister. All these methods may be thoroughly reliable, and yet inasmuch as a man must prepare his own catgut to secure anything like uniformly good results, it is doubtful whether any of these methods will be thought simple enough by the general practitioner to warrant him in adopting it. Whereas the method of boiling in carbolized oil, while it stands the severest tests, both of the laboratory and the hospital ward, requires for its adoption no utensils other than those found in every ordinary kitchen.

L.W.S.

HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

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ASSISTED BY

J. W. SMUCK, M.D.

DANGERS OF CONTAMINATED WATER.

Where shall we go for a holiday? is the constantly recurring question which each summer brings to nearly every one. With the facilities of locomotion and multiplication of so-called pleasure routes and resorts, we are allowed abundant choice. Discretion must be used in this matter, and among the most important is the effect of contaminated water upon the health-seeker. The sanitary arrangements, taken as a whole, should be considered. Water may be the most deadly drink which we can take. Disease may be caused by drinking water, and it does not do to consider the chemist's report as final, but we must have the report of the bacteriologists as well regarding purity. It is well known that typhoid is, in the majority of cases, due to impure water; whether it be from drinking water or the various articles of food, such as milk, oysters, ice, cream, etc. Those who seek health by rest and change of air, will do well to guard themselves.—*New York Medical Record.*

CLIMATIC CONDITIONS IN RELATION TO HEALTH.

Gen. A. W. Greely, chief signal officer U.S. army, writing in the recent Summer Resort special of the *New York Medical Record*, says, "the government established a monthly publication called *Climate and Health*, but have discontinued it." The most important life region, the austral, is practically co-existent with the United States—yet there it presents climatic conditions that are at times and in places most detrimental to human health. "It is significant that death from sunstroke and exposure to heat is practically unknown over regions where the highest temperatures have not exceeded 100° F., that is on the immediate Pacific coast, the regions

of the great lakes, over the Blue Ridge, Alleghany, Catskill, Adirondacks, and other mountains in the eastern part of the United States, and also the higher altitudes of the Rocky mountain region, as well as at certain places on the New England and New Jersey coasts."

It will be seen from this that we, in Canada, are especially favored.

The degree of humidity is a potent factor in allowing or causing a range of temperature, thus aggravating certain diseases. Medical experts on respiratory diseases would do well to study the influence thus exerted on air passages.

SOME PHYSICAL EFFECTS OF ARCTIC COLD, DARKNESS, AND LIGHT.

Dr. F. A. Cook, who was surgeon to the first Peary Arctic expedition, in the New York *Medical Record* of June 12th, tells of his personal observations, experiences, and deductions.

There is a winter night of about four months, from October 20th to February 14th, and a summer of day from May 1st to middle of August. The temperature ranges from zero, Fah., to 60° below in winter; during the summer, from zero to 60° above.

The air is clear, free from dust and smoke, and so pure that men can stand great physical labor with little exhaustion.

The great amount of snow and ice in winter and the melting of it in summer equalizes the temperature, so that life is possible.

Myriads of birds appear in early summer to disappear at the approach of winter. The Polar bear, as all other Arctic animals, early develops an ability to fast for long periods during winter. The reindeer shows this ability to a marked degree, and when well fed, puts on fat in the dorsal and lumbar regions where they will afford the least trouble in locomotion.

The native people, like the animals, have evolved a system of life and adaptation to their habitat that could not be much improved by civilized aid.

The effect of the darkness in winter was more marked than was the effect of cold. The bodies and minds of all became sluggish. When the air was still and dry the cold was not felt so keenly as when the wind carried moisture from the south. The Eskimo do not seem to be as much affected by the temperature as do the Caucasians.

The organs of generation in the Eskimo mature late; in men, about twenty, and in girls, from sixteen to twenty years of age.

There seems to be a period of sexual excitement occurring soon after the return of the sun. For a time everything is given up to the gratification of the passions.

During the rest of the year life resolves itself into a matter-of-fact existence—a continuous series of fierce struggles for food, clothing, and shelter, during which they have little time or ambition to nurse or gratify amorous instincts.

J.W.S.

REPORT OF PROVINCIAL BOARD OF HEALTH.

Monthly report issued by the Provincial Board of Health, showing the deaths from contagious diseases in the province, as reported to the Registrar-General by the division registrars throughout the province, for the month of May, 1897.

The Act relating to the registration of births, marriages, and deaths requires that monthly returns of contagious diseases be made by the division registrars on or before the 5th day of every month. The returns for May have been received by the Department up to the 15th, before tabulation, in order to have them as complete as possible.

Total number of municipalities in the province, 745.

Number which made return to June 15th, 540.

Table showing total deaths returned from the several contagious diseases for a population of 1,471,365, which were caused as follows: (Total population of the province, 2,233,117.)

	Population	No. of deaths from and rate per 1,000 per annum.						Total.
		Scarlatina.	Diphtheria.	Measles.	Whooping Cough.	Typhoid Fever.	Tuberculosis.	
Cities	377,349	11 (0.3)	23 (0.7)		1 (0.03)	7 (0.2)	64 (2.0)	106
Towns and villages reporting.	281,497	4 (0.1)	7 (0.3)			1 (0.04)	37 (1.6)	49
Townships reporting.....	812,519	2 (0.3)	9 (0.1)	1 (0.01)	3 (0.04)	1 (0.01)	72 (1.1)	88
Population reporting.....	1,471,365 (61.5%)	17 (0.1)	39 (0.3)	1 (0.008)	4 (0.03)	9 (0.07)	173 (1.4)	243 (1.81)

MODEL PLUMBING BY-LAW.

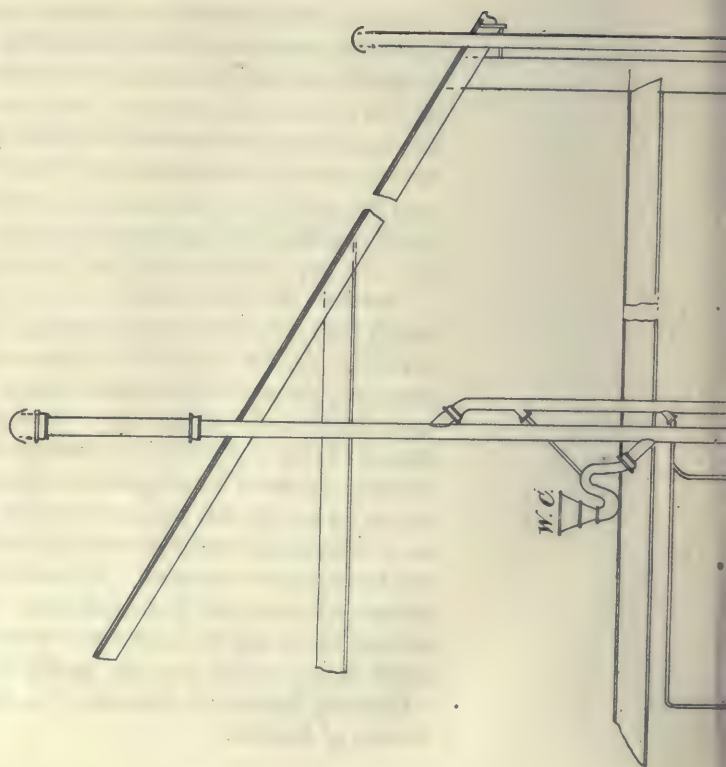
The Provincial Board of Health have recently issued a pamphlet containing a model by-law which is recommended for adoption by the various municipalities in Ontario where there is a system of sewerage disposal. As will be seen by reference to the diagram, the trap is laid within the wall. All the pipes are uncovered so as to be easily accessible. They are provided with screws at points most likely to become choked, so as to allow easy inspection and cleaning. The trap is entirely new, and is fitted with suitable fresh air inlet and sewer gas outlet above the house roof, and with cleaning screws, one outer, to allow the proximal end to be seen, and another inner one, which allows the farther or sewer end to be reached. Provision is made for the ventilation of the traps, etc., through the house. (See illustration.)

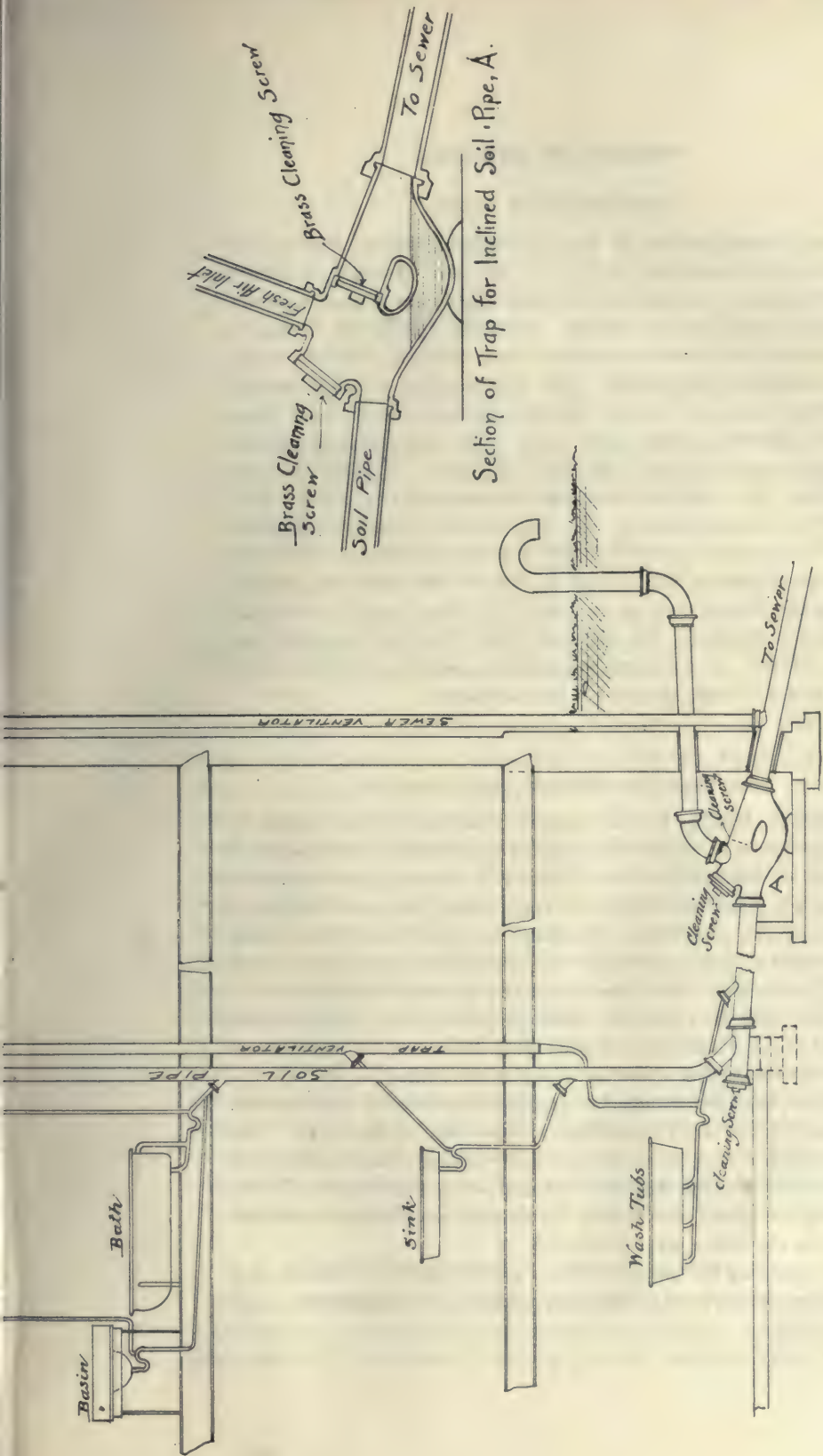
STREET CLEANING BY DIRECT LABOR.

The two cleanest cities on the continent to-day are Toronto and New York, and they are both cleaned by direct labor.

New York not only employs and thus directs all its street cleaning and garbage dispatch forces, but it has an organized department, with an adequate and properly adjusted equipment of horses, carts, brooms, stables, and stations, and it pays its men \$2 a day and upward, for eight hours' work. It is by the method of direct labor, under model conditions of employment, that this first worthy result of the kind in a large American city has been achieved.

Toronto, the other of these two exemplary cities, has gone even further than New York in eliminating the contractor. In this enterprising Canadian town, with 190,000 people, Street Commissioner Jones has, during the last seven years, entirely revolutionized the care of the streets of the city. He has not only organized the execution of this work under a distinct department, but out of the margin thus saved from the annual appropriations for caring for the streets, he has actually built and equipped a modest but complete set of workshops, where the entire construction and repair work of the department is executed. A considerable element of this saving of labor has been due to the automatic loading machines, invented in these shops, which elevate the winrows of litter directly from the street into a dump cart as rapidly as horses can walk.—From "Cleaning Streets by Contract," by George E. Hooker, in April *Review of Reviews*.





SECTION SHEWING GENERAL ARRANGEMENT
OF HOUSE PLUMBING AND DRAINAGE

A MICROBE-PROOF HOUSE.

The current number of the *Sanitarian* gives an account of a microbe-proof house built by Dr. W. Van der Heyden, of Utrecht and Yokohama. It consists of double thicknesses of glass so joined as to have absolutely no cracks. Entrance is effected through a long corridor with doors so arranged as to exclude all the air except that entangled in the clothes. The sole supply of air is brought from some distance, properly filtered through cotton, and driven against a glycerine-coated plate in the cellar to entangle the germs, after the manner of our "stickfast" fly paper. Ventilation takes place near the roof, which allows for exit of air, but no inlet. Impurities due to breathing, etc., are carefully absorbed by chemicals. The spaces between the glass plates of the wall are filled with a solution of certain salts so as to absorb the solar heat, thereby keeping the interior cool by day, and yet when there is less solar heat than is desirable, the radiation from this solution supplies heat to the interior. It is seldom necessary to heat by artificial means unless several cloudy days occur in succession. J.W.S.

AN IMPROVED METHOD OF FILTRATION.

Frank H. Mason, Consul-General, Frankfort, in his report to the Department of State, U.S.A., gives the details of the system of filtration at Worms-on-Rhine. Instead of the sand filters in ordinary use, and which are difficult to keep clean, Director Fischer, of the waterworks of Worms, conceived the idea that clean, sharp sand, mixed in due proportion with finely pulverized glass, would form a porous mass which may be baked into any desired form.

In this case the filters are made in plates forty inches square and eight inches thick, that is, with walls three inches in thickness and about two inches of hollow space at the centre.

These plates are arranged in groups or batteries of any number. The water in the tanks should cover them three or four feet. The water is then forced by its own pressure through the porous walls into the hollow space, where it trickles down and is drawn off. By reversing the action, and forcing the water in an opposite direction for a time the plates may be cleaned.

By arranging the plates in groups one set may be cleaned at a time, so no impairment of efficiency occurs.—*The Sanitarian*.

PATHOLOGY AND BACTERIOLOGY

IN CHARGE OF

JOHN CAVEN, B.A., M.D., L.R.C.P. Lond.,

Professor of Pathology, University of Toronto and Ontario Veterinary College; Pathologist to Toronto General Hospital and Home for Incurables;

AND

JOHN J. MACKENZIE, B.A.,

Bacteriologist to the Provincial Board of Health;

ASSISTED BY

JOHN A. AMYOT, M.B. Tor.,

Demonstrator of Pathology, University of Toronto; Assistant Surgeon to St. Michael's Hospital; Physician to House of Providence.

INVESTIGATIONS CONCERNING THE MICROSPORON FURFUR.

Spietschka (*Archiv fur Dermatologie and Syphilis*, Band xxxvii., Hefte 1 and 2), who has recently studied this fungus, sums up the results of his investigations as follows: Out of twelve different cases which were employed for culture experiments one and the same fungus was obtained. This fungus was differentiated from other pathogenous hyphomycetes and non-pathogenous moulds through its cultural properties. In the very numerous culture experiments which were undertaken with scales from herpes tonsurans, eczema marginatum, favus, pityriasis rosea, and other affections, this fungus was never found. Reinoculation of pure cultures of this fungus upon man was successful in producing a disease of the skin which consisted of brown patches without inflammatory symptoms, associated with active desquamation. In these artificially-produced scales the microsporon furfur, in its typical arrangement, could be demonstrated, and out of the same scales the fungus could be again cultivated. Accordingly, this fungus is to be regarded as the cause of pityriasis versicolor.—*University Medical Magazine*, April, 1897.

THE BACTERIOLOGY OF DISEASED ADNEXA.

Kiefer (*Centralblatt fur Gynakologie*, No. 42, 1896) sought to determine the question as to the presence of bacteria in pyosalpinx, what method of examination is of the greatest practical value, the

cover-glass preparation or culture ; the proportion of the different species, and the average virulence of the pyogenic bacteria found. He made cover-glass preparations and cultures from forty cases of pyosalpinx or ovarian abscess, in all of which the pus had soiled the peritoneum during operation. The results are shown in the following table :

<i>Cover Glass Preparation.</i>		<i>Culture.</i>	
52 ½ per cent. contained germs.		40 per cent. contained germs.	
Of these,		Of these,	
32 ½ per cent. were gonococci.		22 ½ per cent. were gonococci.	
22 ½	" " bacteria coli.	10	" " bacteria coli.
7 ½	" " streptococci.	2 ½	" " streptococci.
5	" " staphylococci.	5	" " staphylococci.

Thus it is shown that, although cover-glass preparations show the presence of bacteria, they do not give information regarding their vitality or degree of virulence. The gonococci were largely in majority, next the bacteria coli, the latter mainly found in ovarian abscesses. None of the forty cases died from purulent infection of the peritoneum, which again proves the fact that bacteria confined and encapsulated in closed cavities soon lose their virulence ; they die from their own products—the toxins. The average time determined from the formation to the sterility of the pus is about nine months.—*University Medical Magazine, April, 1897.*

RENDERING OF ANIMALS IMMUNE AGAINST THE VENOM OF THE COBRA AND OTHER SERPENTS.

Fraser (*British Medical Journal*, June 15, 1895) gives the results of some interesting experiments with the venom from different serpents. That of the cobra was most largely used, though rattle-snake-poison gave the same results as did the venom from the brown and black snake of Australia. The lethal dose was first found, using guinea-pigs, rabbits, cats, and harmless snakes as subjects. It was found that the action of the poison was twofold—the action on the general system and the local action.

In immunizing animals it was found that the action on the functions was much more quickly and easily controlled than the local action. It was found after many experiments that rabbits could by the use of gradually increasing doses become accustomed to twenty, thirty, and forty times the minimum lethal dose. The duration of immunity has not been definitely determined, but large

doses have been given as long as twenty days after immunization with no effect whatsoever.

The blood-serum of immunized animals was used to give protection to animals from lethal doses of the poison. To this serum the term *antivenene* is applied, and the experiments proved positively that this antivenene is able in varying conditions of administration to perfectly prevent lethal doses of the venom of the most poisonous animals from producing death in unprotected animals.

It is proposed to carry on experiments and obtain the antivenene in large quantities in order that its applicability to the cure of snake-bite in man may be tested in India, where there is an annual mortality of 20,000 from this accident.

TREATMENT OF SCARLATINA BY AN ANTISTREPTOCOCCIC SERUM.

Alexandre Marmorek in "Ann. de l'Institut Pasteur." (*Abstract*). Jan., 1896.

Germ of scarlatina unknown. Streptococcus pyog. *always* found in the throat in this disease, and constantly present in complicating lesions, *e.g.*, buboes, nephritis, endocarditis, otitis, pleurisy, etc.

Knowledge of these facts suggests the use of antistreptococcic serum in order to eliminate it as source of danger, and render treatment more easy.

It is noticeable that epidemics vary in severity, and even in the same epidemic light and severe cases occur side by side. Streptococcic symptoms, however, occur in *all* cases.

Experimental treatment. Oct. 16—Dec. 31, 1895. 103 cases of scarlatina in service of Dr. Josias; seven of these not treated with serum. Ninety-six infants were treated with serum of preventive power, 30,000. (The epidemic was light at first, but gradually became serious).

In all the streptococcic was demonstrated. In seventeen Loeffler's bacillus was found, and four of these died with marked symptoms of malignant diphtheria. One infant of two years of age died of a frank double pneumonia.

All cases received on entrance 10 c.c. of the serum; if seriously ill, 20 c.c. Treatment was restricted to serum and washing of throat. Injections were repeated daily till temperature fell. Usually one to two injections sufficed. If buboes or albuminuria showed themselves, injections were begun again and kept up till cure. The effects of the serum are transient, and therefore it was necessary to watch and renew when streptococcic symptoms came late. Light

cases got 10-30 c.c.; severe, 40-80. In one case attacked with broncho-pneumonia 90 c.c. were necessary to cure.

The most marked effect of the serum was upon the buboes. Nineteen cases had on admission, or shortly after, buboes on the neck. All resolved without any suppuration.

In one case otitis with suppuration developed in spite of serum; it soon ceased. In four cases admitted with double otitis the serum promptly put an end to suppuration. One or two injections always sufficed to put an end to albuminuria. False membranes from throat were rapidly cast off under serum, and delirium ceased; the pulse became slow and soft. Temperature fell, *if due to streptococcic lesions*, otherwise ran ordinary course. The general condition was markedly improved. It seems to show that the *scarlatina proper* is *not* due to streptococcic.

The only disturbance seen as a result, *i.e.*, of injections, was erythema of throat.

Conclusions: Too few cases; results apparently good so far as they went.

[Kurth found streptococcic in scarlet fever which he named *streptococcic conglomeratus* from its form. A central mass of cocci, seemingly quite irregular, *i.e.*, staphylococcic, forms with a few short curved chains of a few articles, project here and there from the border of the mass. In a case recently examined here the conglomerate coccus was easily separated from the blood. In a recent paper by Widal and Besancon it is shown that it is quite impossible to differentiate the thirty (30) or more so-called forms of streptococci from one another. All supposed tests break down under examination.—J.C.]

Editorials.

THE ONTARIO MEDICAL COUNCIL.

THE proceedings at the recent meeting of the Ontario Medical Council were in no sense flat or prosy. The discussions at certain sessions were decidedly breezy, but always commendable. Partyism was especially conspicuous, and perhaps did no harm, excepting when it influenced certain members to indulge in personalities. The work of the various committees was quickly, well, and faithfully performed; and, as a consequence, the results upon the whole are likely to give general satisfaction. Dr. Thorburn, of Toronto, was elected President, and as chairman showed his usual tact and ability, although his rulings were not always satisfactory to all parties. Dr. Henry, of Orangeville, an old and faithful member of the council, was elected Vice-President. Dr. Pyne, as a matter of course, was re-elected Registrar. We were much pleased to see Dr. Wilberforce Aikins, son of Dr. W. T. Aikins, who was acting treasurer since the formation of the council, elected Treasurer without a division. Dr. Wilberforce has done the work wholly or in part for several years in a manner that has given general satisfaction to all parties, and well deserved the honor that has been conferred on him. Mr. Alexander Downey was re-elected stenographer.

The Education Committee considered several important matters connected with the curriculum, and made a few changes. The most important of these was the lengthening of the annual session in the medical schools from six to eight months each, such change to come into effect in the fall of 1899. Some thought that in lengthening the yearly sessions so materially it might be well to abolish the fifth year; but, as a very decided majority of the territorial representatives were in favor of retaining it, for the present at least, it was unanimously decided to make no change in this respect. We have expressed our opinions on this question before; and, while they are not in accordance with the expressed wish of

the council, we think that due respect should be paid to the majority, and we cheerfully accept their decision. The regulations as to didactic lectures were not changed, but more clinical teaching will be required in the future. A new subject has been added to the curriculum, viz., anæsthesia, and the administration of anæsthetics, in which five lectures and five demonstrations will be required. Certain additions have been made in the requirements as to the teaching of pathology, and a regular course of instruction in bacteriology will be demanded. Certain changes were made respecting certificates of attendance on lectures which are intended to prevent the schools from admitting students after the Christmas holidays.

THE NURSING-AT-HOME MISSION IN TORONTO.

WE know of no charitable organization in this Province that is doing, in a quiet and unostentatious way, more noble work than the Nursing-at-Home Mission of Toronto. It was established eleven years ago, its chief aim being to nurse the deserving sick poor at their own homes. There are at present six persons in the mission, one superintendent and five nurses. The committee of management have appointed an investigating committee, whose duty it is to enquire carefully into the merits of all cases coming before them, and select only those that properly come within their jurisdiction, according to their rule of selection. We are glad to notice that considerable interest is now being taken in this worthy charity by the public and the lay press. The managers contemplate the erection of a new building, and we hope that our wealthy and charitable citizens will consider carefully the character of the work done by this band of noble women, and give them some substantial assistance towards placing the institution on a better basis.

One physician, well acquainted with the nature of the work done, in speaking to a *Mail* reporter recently, spoke as follows: "I think that the work of the Nursing-at-Home Mission has amply proved the right of the organization to the kindly consideration both of the public and of the city authorities. The work that it undertakes is not duplicated by any existing organization. The main work of the institution is done in the homes of the very poor, and the dispensary part of it, which, necessarily, is subsidiary to the work of carrying out in the homes of the patients the orders of the physicians attending them. The selective process thus applied makes it impossible for imposition to occur. People who can pay are found out, and dropped, or compelled to pay, and to my mind

this very fact should induce the city authorities to deal very liberally with the mission, as the abuse of city charity, which is so glaring at nearly all other public dispensaries, is here effectively prevented. As to the value of the nurses' services to the poor, nothing too strong can be said, as I have myself proved many times in practice."

Another said: "The Nursing-at-Home Mission merits the most generous support of the public. The mission seeks to help, care for the sick poor in their own homes, when it is impossible or inadvisable to send them to an hospital. I have had many opportunities of observing the excellent work done by the nurses of this mission, often under the most difficult and disheartening conditions. The nurses are well trained, and they undertake nothing beyond that for which their training qualifies them. The people of Toronto cannot commemorate the Diamond Jubilee better than by providing a fund to place this mission on an efficient footing, so that it may be prepared to care for all the sick poor in the city who need such assistance."

ROENTGEN RAYS.

IT is not right that we should believe implicitly all that the daily press publish concerning the destructive powers of Roentgen Rays. The medical press of late have allowed the subject to drop from sight too much. Great advancement has been made within the past few months, principally in reducing the time of exposure. On another page in this issue will be found the notes on a case of foreign body in the œsophagus. The diagnosis was made solely by the aid of Roentgen rays, and undoubtedly the discovery and removal of the cent saved the child's life. It is quite true that one could have groped about in the œsophagus hunting for the coin, or even made an incision, but with the skiagraph the diagnosis was made certain without inconvenience to the little patient. The cases of extensive burn following exposure to the rays that have been reported are examples of idiosyncrasy on the part of the subject, or the too long exposure of the part to very powerful rays. One case of very extensive burn followed an exposure of *four* hours. This particular case, widely reported in the daily press, and has brought an amount of discredit on the use of the rays as a means of diagnosis that it does not merit.

We have taken most perfect skiagraphs of the hip joint in five minutes in an eight year old child. The ankle joint and leg in two minutes. The hand in half a minute. With these short exposures it is most unlikely that any burning results will follow. We have made not less than two hundred exposures, and have yet to see the first bad result.

MEDICINE DURING THE VICTORIAN ERA.

THE editor of *The Practitioner* (Mr. Malcolm Morris), with the assistance of a number of contributors, including Dr. Samuel Wilks, Sir Dyer Duckworth, Sir William Broadbent, Bart., Sir James Crichton-Browne, Mr. Frederick Treves, Mr. Watson Cheyne, Dr. F. H. Champneys, Mr. Henry Power, and other equally distinguished physicians and surgeons, has prepared a special issue for June, entitled "Queen Victoria's Diamond Jubilee Special Commemoration Number," which contains a most interesting abstract of the advances made in all departments of medicine during the sixty years of Her Majesty's reign. A series of articles are published on the following subjects: Medicine Fifty Years ago, Progress of Medicine, Psychological Medicine, Progress of Surgery, Wound Treatment, Midwifery and Gynæcology, Special Branches of Medicine and Surgery, Pathology, Bacteriology, Therapeutics, Preventive Medicine, and Nursing. It also gives particulars as to the Court Physicians and Surgeons during this period.

We publish in this number of THE CANADIAN PRACTITIONER, as a separate article, the editorial comments on this remarkable era, as far as the broad subject of medicine is concerned, written in that bright and charming style which has characterized the editorial columns since Mr. Morris assumed control of this great English monthly journal. We also publish other extracts and abstracts which will be found interesting. It is impossible to properly epitomize such articles as those of Duckworth, Broadbent, Treves, Watson Cheyne, Hamilton, Woodhead, and others. We can only say that they are such as we would naturally expect from such bright and shining lights in the mother country, and are well worthy of careful study on the part of those who have an opportunity of reading them.

UPPER CANADA DURING THE QUEEN'S REIGN.

THE governing body in medical matters when Her Majesty ascended the throne, was the Upper Canada Medical Board, which was established in 1819. It was the duty of this Board to examine all candidates for license, and to grant certificates to those found qualified to practise, whereupon "the governor, or person administering the government," granted the licenses. The members of the Board in 1837 were Drs. Widmer, Baldwin, Grant, Powell, Horne, Sampson, Deihl, King, Rolph, Ridley, Stratford, Duncombe, Hanley, Latham, Winder, O'Brien, and Morrison. There

was much dissatisfaction in certain quarters because Drs. Gwynne and Egan were not on the Board in the place of Drs. Widmer and Latham.

At this time there was no medical school in the Province, and the Board strongly advised the establishment of a Faculty of Medicine in King's College. In their recommendation to His Excellency the Lieutenant-Governor they stated that intending students were compelled to go to Great Britain, Lower Canada, Philadelphia, New York, Fairfield, and other colleges in the neighboring States to obtain a medical education; and for these reasons they thought it important that such students should have ample opportunities for studying in our own Province. This Medical Faculty first gave regular lectures in 1843, but was abolished in 1853, and remained a dead letter until it was re-established in 1887.

In the meantime Dr. Rolph was gaining a reputation as a teacher of medicine. The following were pupils of his between 1837 and 1843: Parks, Mitchell, Beatty, Barnhart, Cameron, D. Lee, J. W. Corson, J. W. Hunter, H. H. Wright, and J. H. Richardson. Rolph's School of Medicine was opened, in a sense, in 1843, after Rolph returned from Rochester, and was first called the Toronto School of Medicine in 1848, but was not properly incorporated under that title until 1853. The Trinity College Medical School, which for a time was called the Upper Canada School of Medicine, was opened in 1850. Shortly after the incorporation of the Toronto School of Medicine Dr. Rolph withdrew from that institution and established a new school, which became the Medical Faculty of the University of Victoria College. Shortly after that time a medical school was organized in Kingston, and many years after a Medical Faculty was established in London in connection with the Western University, and two schools were opened for women—one in Kingston and one in Toronto.

In 1839 the College of Physicians and Surgeons of Upper Canada was incorporated, but only remained in existence for two years. After this the old Upper Canada Medical Board resumed its functions. In 1866 the Medical Council of Ontario was organized, and became the College of Physicians and Surgeons of Ontario in 1870. This body is to-day the Medical Parliament of the province.

SIXTY YEARS AGO.

A FULL length portrait of Canada's greatest Surgeon, sixty years ago, Dr. Christopher Widmer, occupies a prominent position in the Toronto General Hospital. Although this country had no

medical schools in those days she had a goodly number of able, cultured, and highly educated physicians and surgeons in both upper and lower Canada. In Toronto, Widmer held the first place, but among his contemporaries in 1837 were many distinguished men, whose memories are held in high respect by our older inhabitants, including Drs. Rolph, Dunlop, Grozune, King, Hornby, Nicol, Deihl, and Morrison. In other parts of this Province there lived and worked other equally able and worthy physicians, such as Dr. Charles W. Covernton, then practising in Simcoe, and now living in Toronto; Dr. James Grant, of Martintown, Glengarry, afterwards of Ottawa, father of Sir James Grant, M.D.; Dr. Gerald O'Reilly, of Hamilton, father of Dr. Charles, Gerald, and Edward O'Reilly; Dr. Alfred Digby, of Brantford, father of Dr. James W. Digby; Dr. Walter H. Burritt, of Smith's Falls, father of Dr. H. C. Burritt; Dr. Charles W. Buchanan, of Brockville; Dr. Robert D. Hamilton, of Scarborough; Dr. James Hamilton, of Dundas; Dr. Joseph Hamilton, of Queenston Heights.

This is a very incomplete list, but, so far as we can learn, includes a majority of those who were most prominent at that time. Nearly all were connected with the Rebellion of that year 1837, mostly as military surgeons or officers of the line on the Loyalist side. A few, however, sympathized with Wm. Lyon Mackenzie's views, and gave him more or less assistance. Of these the most notable were Dr. John Rolph, and Thos. D. Morrison. After the collapse of the rebel demonstration against Toronto, Morrison was placed under arrest, and we find in Canniff's work on "The Medical Profession of Upper Canada" (from which we have received much information for this article) the following quotation from a published account of the "Trial of Thomas David Morrison for High Treason," April 24th, 1838. "It was expected that he would be convicted, and his life was trembling in the balance, however, the jury, after long deliberation, brought in a verdict of not guilty." Rolph was informed of certain dangers threatening him by his house student, young Henry Wright, afterwards Dr. Henry Wright, of Toronto, and, with considerable difficulty, escaped from the country, and resided until 1843 in Rochester. By Royal Proclamation, dated December 11, 1837, a reward of \$500 was offered for his apprehension and deliverance "up to justice, in the city of Toronto."

Book Reviews.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION. VOLUME IX. Ninth session held at Nashville, Tenn., November 10, 11, and 12, 1896. Published by the Association.

We have before referred to this association and its work, and always in words of praise. There is a fire, an energy, and a life in the society that always makes its work interesting and refreshing. Dr. W. E. B. Davis, of Birmingham, Ala., is still secretary, and, therefore, all things go well. The meeting at Nashville was an excellent one in all respects, the papers were above the average, and the discussions were equally good and interesting. The social features were as pleasant as "Southern hospitality" could make them. The world contains nothing better for such purposes.

MANUAL OF STATIC ELECTRICITY IN X-RAY AND THERAPEUTIC USES. By S. H. Monell, M.D., Founder and Chief Instructor of the Brooklyn Post-Graduate School of Clinical Electro-Therapeutics and Roentgen Photography; Fellow of the New York Academy of Medicine, Member of the New York County Medical Society, etc., etc. New York: William Beverley Harison, publisher, 3 and 5 West Eighteenth Street. Pages, 614; octavo; cloth; gilt. Price \$5 net; postage 35 cents.

We find in the above volume material that every physician who is interested in the use of static electricity should be in possession of. It is the only exhaustive treatise on static electricity that we are acquainted with, and it deals very exhaustively with the whole subject. The author is careful to explain how static machines should be cared for. He does not wish the blame for failure to be attributed to the wrong cause, and endeavors to place the blame on the careless operator and the one who does not keep the machine free from dust and damp. We know of no instrument that requires more careful attention than a static machine; nor one that so soon deteriorates, but with proper care its action is absolutely certain. Considerable attention has been devoted to the production of X rays by the static machine. Dr. Monell has done most excellent work with the static machine, and his description of the apparatus, and how to use it, is very lucid. We cannot agree entirely with his remark in chapter vii. that "The high potential static current from therapeutic Holtz machines is superior to any coil known to be made at this date

(Feb. 24, 1897) in respect to economy, value, efficiency, satisfaction, and almost all that pertains to the medical and surgical uses of X-rays in hospital and office practice." For economy, absence of noise, ease of manipulation, we much prefer the coil. The author states that with static electricity to excite the tubes no danger of dermatitis exists. The only two serious cases of burns we have seen occurred from the use of static electricity to excite the tubes. We know the cases were over-exposed, but we have over exposed cases with the coil without evil results. The causes of burns produced by exposure to X-rays are not yet explained, and whether, as the author says, they are due to radiant heat-rays, or, as we believe, to some idiosyncrasy on the part of the individual, we are not prepared to make a positive assertion. The balance of the book is devoted to the therapeutics of static electricity and the examination of clinical results. We know of the good effects of electricity, and particularly of static electricity and can freely advise a perusal of this most instructive book, and congratulate the author on the clearness of his description and the easy style in which the book is written.

The publisher has succeeded in putting out a very attractive volume.

W. B. Saunders, Philadelphia, announces in preparation for early publication :

AN AMERICAN TEXT-BOOK OF GENITO-URINARY AND SKIN DISEASES. Edited by L. Bolton Bangs, M.D., Late Professor of Genito-Urinary and Venereal Diseases, New York Post-Graduate Medical School and Hospital, and William A. Hardaway, M.D., Professor of Diseases of the Skin, Missouri Medical College.

AN AMERICAN TEXT-BOOK OF DISEASES OF THE EYE, EAR, NOSE, AND THROAT. Edited by G. E. de Schweinitz, M.D., Professor of Ophthalmology in the Jefferson Medical College ; and B. Alexander Randall, M.D., Professor of Diseases of the Ear in the University of Pennsylvania and in the Philadelphia Polyclinic.

MACDONALD'S SURGICAL DIAGNOSIS AND TREATMENT. *Surgical Diagnosis and Treatment.* By J. W. Macdonald, M.D., Graduate of Medicine of the University of Edinburgh ; Licentiate of the Royal College of Surgeons, Edinburgh ; Professor of the Practice of Surgery and of Clinical Surgery, Minneapolis College of Physicians and Surgeons.

ANDER'S THEORY AND PRACTICE OF MEDICINE. *A Text-Book of the Theory and Practice of Medicine.* By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia.

SENN'S GENITO-URINARY TUBERCULOSIS. *Tuberculosis of the Genito-Urinary Apparatus, Male and Female.* By Nicholas Senn, M.D., Ph.D., LL.D., Professor of the Practice of Surgery and of Clinical Surgery, Rush Medical College, Chicago.

PENROSE'S GYNÆCOLOGY. *A Text-Book of Gynæcology.* By Charles B. Penrose, M.D., Professor of Gynæcology, University of Pennsylvania.

- HIRST'S OBSTETRICS. *A Text-Book of Obstetrics.* By Barton Cook Hirst, M.D., Professor of Obstetrics, University of Pennsylvania.
- MOORE'S ORTHOPÆDIC SURGERY. *A Manual of Orthopædic Surgery.* By James E. Moore, M.D., Professor of Orthopædics and Adjunct Professor of Clinical Surgery, University of Minnesota, College of Medicine and Surgery.
- HEISLER'S EMBRYOLOGY. *A Text-Book of Embryology.* By John C. Heisler, M.D., Prosector to the Professor of Anatomy, Medical Department of the University of Pennsylvania.
- MALLORY AND WRIGHT'S PATHOLOGICAL TECHNIQUE. *Pathological Technique.* By Frank B. Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard Medical School; Assistant Pathologist to the Boston City Hospital; and James H. Wright, A.M., M.D., Instructor in Pathology, Harvard Medical School; Pathologist to the Massachusetts General Hospital.
- SUTTON AND GILES' DISEASES OF WOMEN. (New volume in Saunders' Aid Series.) *Diseases of Women.* By J. Bland Sutton, F.R.C.S., Assistant Surgeon to Middlesex Hospital, and Surgeon to Chelsea Hospital, London; and Arthur E. Giles, M.D., B.Sc., London, F.R.C.S. Edin., Assistant Surgeon, Chelsea Hospital, London.

Books received :

- THE MENOPAUSE. A consideration of the phenomena which occur to women at the close of the child-bearing period, with incidental allusions to their relationship to menstruation. Also a particular consideration of the premature (especially the artificial) menopause. By Andrew F. Currier, A.B., M.D., New York. New York : D. Appleton & Company. Toronto : N. Morang, agent, Traders' Bank Building.
- GENITO-URINARY SURGERY AND VENEREAL DISEASES. By J. William White, M.D., Professor of Clinical Surgery University of Pennsylvania, and Edward Martin, M.D., Clinical Professor of Genito-Urinary Diseases University of Pennsylvania. 1065 pages. Illustrated with 243 engravings and 7 colored plates. Philadelphia : J. B. Lippincott Company. Dominion agent, Charles Roberts, 593a Cadieux street, Montreal.
- LIPPINCOTT'S MEDICAL DICTIONARY. A complete vocabulary of the terms used in medicine and the allied sciences, with their pronunciation, etymology, and signification, including much collateral information of a descriptive and encyclopædic character. Prepared on the basis of Thomas' Complete Medical Dictionary, by Ryland W. Greene, A.B., with the editorial collaboration of John Ashurst, Jr., M.D., LL.D., Boston, Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania; George A. Piersol, M.D., Professor of Anatomy in the University of Pennsylvania; Joseph P. Remington, Ph.M., F.C.S., Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy. 1154 pages. Philadelphia : J. B. Lippincott Company. Dominion agent, Charles Roberts, 593a Cadieux street, Montreal.

Medical Items.

DR. W. B. THISTLE, McCaul street, sailed for London, Eng., this month.

DR. JAMES G. CAVEN will spend July and August in London, England.

DR. MARTIN, Carlton street, left for British Columbia July 1st. He will be away a month.

DR. NATTRESS, of Toronto, has been appointed to the position of surgeon to No. 2 Company, R.R.C.I., Stanley Barracks, which was made vacant by the death of Dr. Strange. Dr. Nattress, who has been surgeon of the Queen's Own for many years, will enter upon his new duties immediately.

BRITISH MEDICAL ASSOCIATION—MONTREAL MEETING, AUGUST 30, 1897.—It will be necessary for those who purpose attending the Montreal meeting to become members of the association. For the remainder of the year the membership fee is fixed at one-half guinea, which will secure membership and the *British Medical Journal* until January, 1898. Joining through the Toronto Branch the amount will be \$2.75, half the annual fee of \$5.50. Dr. Machell, 95 Bellevue Avenue, Toronto, the treasurer, will receive applications and subscriptions.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—The next meeting of the Mississippi Valley Medical Association will be held in Louisville on October 5, 6, 7, and 8, 1897. All railroads will offer reduced rates. The President, Dr. Thos. Hunt Stucky, and the Chairman of the Committee of Arrangements, Dr. H. Horace Grant, promise that the meeting will be the most successful in the history of the association, and this promise is warranted by the well known hospitality of Louisville and Kentucky doctors. Titles of papers should be sent to the secretary, Dr. H. W. Loeb, 3559 Olive Street, St. Louis.

MUSKOKA COTTAGE SANITARIUM—A meeting of the executive committee of the trustees of the National Sanitarium Association was held at the Muskoka Sanitarium, Gravenhurst, July 1st. The work of furnishing and equipping the main building was found so far advanced that while the public opening ceremonies will not take place until some time next month it was decided to open the doors to patients immediately. The fees were fixed at \$6 per week, including board, washing, and medical attendance. Only patients whose condition affords reason-

able prospects of recovery under favorable treatment will be admitted. All correspondence about admission should be addressed to the Medical Superintendent, Cottage Sanitarium, Gravenhurst, who will give all necessary information about the preliminary medical examination.

PROVISIONAL PROGRAMME OF CANADIAN MEDICAL ASSOCIATION.—Monday, August 30, 1897, 1 p.m.—Meeting at one of the hospitals; address by Chairman of Local Committee of Arrangements; clinical demonstration. 3 p.m.—General session; reception of visitors; election of members; President's address; addresses by prominent Englishmen; appointing of committees. 8 p.m.—No general session; meetings of committees.

Tuesday, August 31, 1897, 9.30 a.m.—General session; Report of Committee on Inter-provincial Registration; Report of Nomination Committee; Reports of other committees; general business.

N.B.—The railways will grant a return trip on the certificate plan for *single fare* from points *east of Fort William*.

For further particulars address F. N. G. Starr, General Secretary, 471 College Street, Toronto.

THE FUTURE OF MEDICINE.—Dr. Samuel Wilks, president of the Royal College of Physicians in London, contributes an article in the Jubilee issue of *The Practitioner*, entitled "Fifty Years Ago," in which we find the following concluding remarks on the future of medicine: "What the future of medicine will be no one can predict, because it is only by developing our present methods that we can judge; but we may be sure that some facts in science will be discovered of which we have at the present time no inkling. Some time ago, when asked this question, I could give nothing but a fanciful answer, which I now quote. What will be the next fifty years' experience in medicine the wildest imagination cannot conceive. All microbes may have been put to the sword; all organs may be taken out, washed and renewed; continued transplantations of active glands like the thyroid keep the brain in continued activity; or injection of Brown-Séquard's fluid preserve perpetual youth. We may, perhaps, discover what there is in our baneful environments which prevent us living the thousand years of the patriarchs; or, perhaps, a great discovery is close at hand: our concentrated beef and meat essences, being injected into the blood, will take the place of bulky food, so that our intestinal tract will be reduced to a minimum, and then, bellyless, we shall develop into that higher angelic creature which we see so often portrayed—all head and wings.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—The American Association of Obstetricians and Gynecologists will hold its tenth annual meeting at the Cataract House, Niagara Falls, Tuesday, Wednesday, Thursday, and Friday, August 17, 18, 19 and 20, 1897, under the presidency of Dr. James F. W. Ross, of Toronto. The railways have granted reduced fares on the certificate plan to all who

attend the meeting ; the Cataract House has made a reduction from its regular tariff of charges ; the place of meeting is a famous one ; the season of the year auspicious ; and everything seems to conspire to justify a prediction that this will be a large and interesting meeting of this famous association. The date of the meeting has been fixed in mid-August, apart from college sessions, during the vacation season, and at a place where many people like to spend a portion of their outing. The climate of Niagara is always desirable during the heated term, the spray from the cataract giving it a healthy moisture and coolness that is at once invigorating and charming. To visit Niagara under the auspices of this association will afford the tourists exceptional opportunities for the enjoyment of a rare and radiant scenery that is the most sublime in the world. One session will be devoted to the exhibition of specimens and giving their histories. The scientific work of the association will begin on Tuesday morning at 10 o'clock and end Friday at 1 o'clock, and it is expected to so arrange the programme as to afford the members opportunity to visit the places of interest each day on the adjournment of the afternoon session. It is expected that the inducements to attend this meeting are such that Fellows will not only come themselves, but bring their families and invite their friends as well to visit the wondrous cataract.—*Buffalo Medical Journal*.

BRITISH MEDICAL ASSOCIATION—MONTREAL MEETING.

The time of the great medical event of the year at Montreal is not very far distant, and it behooves all who may not have decided to be present at the meeting to speedily make up their minds, and, if the visit is contemplated, to at once inform the Committee at Montreal of the fact. We learn that they are very anxious to know approximately how many they will have to entertain, and urgently request all who intend going to at once inform the local secretary, Dr. J. A. Springle, 2204 St. Catherine street, of the fact. The probable attendance of medical men is estimated at the present time to be about one thousand—two hundred and fifty from England, fifty from other colonies, three hundred from the United States, and four hundred Canadians. Three or four lady members have signified their intention of coming across the Atlantic, among them Mrs. Garrett Anderson. Dr. Saundby, Dr. Barnes, and Mr. Fowke will arrive in Montreal on the 14th of August by the *Parisian*.

Dr. Adami writes that the names of members who intend coming across are coming in daily, but when he wrote was not certain that a special steamer would be required, but he is prepared at any moment to charter a vessel in the event of a sufficient number of late applicants appearing.

Seven eminent men who cannot be present at the meeting have promised to send demonstration specimens. The English secretaries are generally working in that direction.

Among the interesting discussions which are likely to be arranged for, is one on syphilis between the dermatological and pharmacological sections, introduced by Dr. Whitla, of Belfast, Ireland, members of other sections, of course, being invited to attend.

Full arrangements will be made in advance whereby members intending to land at Quebec may obtain cards of membership entitling them to half fare and the privileges granted by the Customs Department. Vessels conveying members will be met at Rimouski probably by Canadian representatives.

One of the most interesting and pleasant excursions will be the one arranged for, to Ottawa, probably on Saturday. Dr. Roddick met the profession in Ottawa some days ago, and consequently the Finance Committee of the City Council promised to undertake all the expenses connected with the giving of a luncheon to the visiting members of the Association.

During Dr. Roddick's recent visit to Toronto, he spent some time with Professor Macallum, secretary of the B.A.A.S., from whom much information was obtained regarding the arrangements for that meeting. He found that a great many purposed attending both meetings, more especially those belonging to the physiological section. Dr. Roddick arranged with the president of the branch, Dr. I. H. Cameron, to have any members of the B.M.A. entertained during their stay in Toronto. He found the profession, as a whole, very enthusiastic regarding the meeting, and very anxious to assist their Montreal brethren in every way.

It was Dr. Roddick's intention to have formed other branches in western Ontario, in such places as London and Hamilton; but there was a feeling on the part of these places that there was not room for branches, which might interfere with the existing local medical societies.

The Rev. Dr. Norton has kindly offered the Association the English Cathedral for a special service, and Dr. Adami will arrange with either Bishop Courtney, Bishop DuMoulin, or Bishop Sutherland, who are now attending the Lambeth Conference, to officiate.

Some six hundred invitations have already been sent out, and replies have been received from 221. Among those who have intimated their intention of attending the meeting are: A. C. Abbott, Department of Hygiene, University of Pennsylvania; John Ashurst, jr., L. D. Bulkley, W. T. Bull, H. T. Byford, H. P. Bowditch, J. Solis-Cohen, T. M. Cheesman, D. W. Cheever, W. B. Coley, J. McKeen Cattell, Fred S. Dennis, D. B. Delavan, Reginald Fitz, Geo. H. Fox, Frank P. Foster, Christian Fenger, Virgil Gibney, H. G. Gerrigues, E. H. Grandin, Langdon Carter Gray, Geo. M. Gould, Hobart A. Hare, C. A. Herter, James Nevin Hyde, E. Hoenpyl, B. C. Hurst, A. Jacobi, Chas. Jewett, M. McKeen, Howard A. Kelly, C. A. Lindsley, John H. Musser, W. F. Mittendorf, Hunter McGuire, Thos. G. Morton, H. H. Mudd, J. B. Murphy, Paul F. Munde, W. P. Northrup, Wm. Pepper, Roswell Park, Fred. C. Shattuck, Louis Starr, W. Alan Starr, J. V. Shoemaker, E. C.

Spitzka, Geo. F. Shrady, E. L. Trudeau, James Tyson, Hiram N. Vineberg, Wm. H. Welch, and Casey A. Wood.

The English list of members coming has already appeared in the *British Medical Journal* and in the daily papers, but it will be of interest to be reminded that those coming will have the privilege of listening to such men as Professor Chas. B. Ball, William Mitchell Banks, Henry Barnes, Prof. R. Boyce, Watson Cheyne, Sidney Coupland, I. Ward Cousin, J. H. Crocker, Prof. E. M. Chookshank, C. Heath, Arthur Kelsey, D. J. Leech, Right Hon. Lord Lister, Harvey Littlejohn, Donald MacAlister, Stephen Mackenzie, Thos. M. Madden, Malcolm Morris, E. Nettleship, Robt. Saundby, W. J. Sinclair, Prof. W. Whitla, Dawson Williams, and Professor Richet, of Paris. Replies have been received from twelve of the branches of the association accepting the invitations tendered requesting them to send delegates.

The Museum Committee report that all their space has been taken up, and they probably will have to secure another building besides the large Victoria Skating Rink. This department will prove one of the most interesting features of the meeting. A rare opportunity will be afforded to see pharmaceutical preparations, surgical and medical appliances, and everything that interests the physician, from the leading firms of the United States and Canada, as well as from across the Atlantic. Among the leading surgical instrument manufacturers will be Collin, of Paris, and Down Bros., of London, the latter making a special exhibition of antiseptic furniture which will be worthy of inspection. Among the leading pharmaceutical houses who are making elaborate displays will be R. K. Mulford & Co., of St. Louis; Parke, Davis & Co., of Detroit; Wyeth, of Philadelphia; Sharpe and Dohme, of Baltimore, and others. Zeiss is making a special display of microscopical apparatus. There will also be a great variety of exhibits from leading firms in Vienna, Berlin, Edinburgh, London, Paris, and New York.

The Local Entertainment Committee are being assisted by a committee of ladies consisting of the wives of the profession in Montreal and others. Among the entertainments provided for, in addition to those mentioned before, are a number of afternoon tea and garden parties. The ladies' committee will specially interest themselves in looking after lady visitors, and will make ample provision for continuously entertaining them during the progress of the meeting, so that members may without hesitation bring their ladies with them and be assured while they themselves are fully occupied with the essential features of the meeting the former will be so well looked after that the time will not hang heavily. The annual dinner will be held at the Windsor Hotel. The large dining room will accommodate six hundred. The dinner will cost five dollars, including wines.

The excursion committee have arranged an attractive and varied programme, which cannot fail to meet the desires of all. We append the printed outline of some of the excursions, which was issued recently.

Among other excursions not noted on the printed list, is the one on

Lake Memphremagog to Newport and Magog. This is one of the most picturesque spots in the Province of Quebec, and the trip will carry the tourist through one of the most fertile portions of Canada, with scenery of mountain, lake, and river, fairly typical of what is characteristic of the province, and to be seen more especially in almost endless variety in the Laurentian district, which for want of time cannot be visited. A special train will be provided, which will enable the party to return in the evening. The steamer will accommodate about 800. Lunch will be taken at Newport, or probably at the foot of Owl's Head, if it is found that the hotel there can supply refreshments for the number expected to go. The excursion will be arranged for Saturday, and it is thought probable that for those desiring it, the privilege of remaining over Sunday and returning on Monday will be obtained. A trip is proposed to Shawenagan Falls, on the St. Maurice River, which is said to almost rival Niagara.

Among other local trips on different afternoons are a ride round the mountain on the electric cars, and through some of the more interesting parts of the city ; a trip to the top of Mount Royal, where a luncheon will be served by the mayor and corporation of Montreal. The incline railway, carriages, or bicycles may be the means of arriving there ; a trip down the St. Lawrence ; another to St. Anne, and down the Lachine Rapids. It can be gained from what we have indicated that those going to the Montreal meeting will not only be benefited from a medical point of view by coming in contact with the leading members of the profession from Britain, the United States, and Canada, and taking in the various discussions and papers which may be expected to represent the most recent advances, but that they will also be fully regaled by a varied and full round of social entertainments and pleasure trips such as has not been privileged to the members of any previous meeting.

AMERICAN MEDICAL ASSOCIATION.

The following officers were elected for ensuing year: President, Brigadier-General George M. Sternberg, M.D., Surgeon-General U.S.A.; first vice-president, J. M. Mathews, Kentucky ; second vice-president, J. L. Thompson, Indiana ; third vice-president, F. W. Wiggin, New York ; fourth vice-president, T. J. Happell, Tennessee ; treasurer, H. P. Newman, Illinois ; secretary, William B. Atkinson, Philadelphia (permanent) ; assistant secretary, W. A. Jayne, Colorado ; librarian, D. J. Webster, Illinois ; chairman committee of arrangements, J. W. Graham, Colorado ; board of trustees, J. W. Priestly, Iowa ; Joseph Eastman, Indiana ; Truman W. Miller, Indiana ; judicial council, D. W. Crouse, Iowa ; T. D. Crothers, Connecticut ; W. T. Bishop, Pennsylvania ; R. C. Moore, Nebraska ; G. B. Gillespie, Tennessee ; C. H. Hughes, Missouri ; Ida J. Hieberger, District of Columbia ; annual addresses, "General Medicine," J. H. Musser, Pennsylvania ; "General Surgery," J. B. Murphy, Illinois ; "State Medicine," S. C. Busey, District of Columbia ;

delegates to International Medical Congress at Moscow, August, 1897, G. S. Mitchell, J. E. Hyndman, Charles Dennison, A. M. Miller, H. L. E. Johnson, George M. Sternberg, D. L. Huntington, A. Marcy, sr., H. D. Holton, Thomas McDevitt, J. N. Quimby, George R. Fowler.

Denver, Col., was chosen as the next place of meeting.

OBITUARY.

J. LEWIS SMITH, M.D.—Dr. J. Lewis Smith, of New York, died June 9, 1897, aged 69. His treatise on "Diseases of Children" is probably better known to us in Canada (or was a few years ago) than any other book on the subject. He had been in poor health for some years, and death finally resulted from "cardiac exhaustion."

WALTER RIVINGTON, M.S. LOND., F.R.C.S. ENG.—Mr. Walter Rivington, one of the most eminent of the surgeons connected with the London Hospital, died at his residence at Epping, May 8, aged 62. He had enjoyed his usual health until April, when he had influenza, followed by an affection of the right lung. The immediate cause of his death was hæmorrhage from the bowels.

WILLIAM THOMPSON LUSK, M.A., M.D., LL.D.—Dr. Lusk, the eminent obstetrician of New York, died suddenly at his home, June 12, of apoplexy, aged 59. He is well known in Canada as the author of the "Science and Art of Obstetrics," which is one of the best text-books on the subject. He was President of the Bellevue Hospital Medical College, and Professor of Obstetrics and Gynæcology in the same institution. He was one of the most highly cultured among physicians of the United States, and was highly honored by his professional brethren in many ways.

JAMES GREIG SMITH, M.A., C.M., M.B., F.R.S.E.—Mr. James Greig Smith, one of the most brilliant surgeons of England, died at his late residence, Bristol, England, May 28, 1897, of pneumonia, aged 43 years. He was born near Aberdeen in 1854, and was educated in that city; graduated in arts in 1873, and in medicine in 1876. He became surgeon on the staff of the Bristol Royal Infirmary in 1879 when he was only 25 years of age. He soon became known as a great surgeon and a great writer on surgery. His treatise on abdominal surgery is now going through a sixth edition, and has been translated into French, German, and Italian. Many of those who have heard so much from and about Greig Smith during the last fifteen years will be surprised to learn that he was so young a man. The loss of such a man at such an age is a serious loss to a nation.

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NOTES ON SOME PECULIAR PHASES IN APPENDICITIS.*

By J. F. W. ROSS, M.D. TOR.,

Professor of Gynæcology, University of Toronto ; Professor of Gynæcology and Abdominal Surgery, Woman's Medical College ; Surgeon to St. John's Hospital, Toronto General Hospital, and St. Michael's Hospital.

FOR the purpose of jotting down a few notes on some of the peculiar phases of appendicitis I have gone over my list of cases and have picked out the salient points. It is not my intention to offer more than a few practical notes.

ETIOLOGY.

We are no nearer a conclusion as to the cause of appendicitis than we were some eight or ten years ago. The foreign body theory has been set aside by some authors. An effort has been made to find the origin of the disease in germs, but why germs should particularly pick out this vestigial structure is not explained by these theorists. Man, different from all animals except a few of the apes

*Read before the Ontario Medical Association, Toronto, June, 1897.

and the wombat, has an appendix vermiformis that is very prone to inflame. In man the organ is developed to its highest degree. Its physiology is unknown; its histology is well known; the cause of disease in the organ is unknown. From time to time foreign bodies have been found free in abscess cavities surrounding this perforated appendix. It has been claimed by some that these foreign bodies were accidentally placed in this position, that is, that they had escaped from the interior of the intestine after perforation. It is easy to understand how the introduction of a foreign body into the lumen of the vermiform appendix can readily produce gangrene of the tip or side of the organ.

A few years ago I produced a lateral intestinal anastomosis on a dog, and, after having allowed the animal to live for some months, destroyed him. On making a thorough examination of the intestinal canal the anastomotic opening was found doing duty, but in the pouch of intestine left at the end of the upper segment were found several small gravel stones. None such were to be found elsewhere. I thought at the time that this pouch resembled closely the blind pouch of the cæcum surrounding the mouth of the vermiform appendix. Considerable pressure must be distributed over this blind end during defecation, as the ileo cæcal valve prevents regurgitation into the ileum. Under such circumstances it cannot be wondered at that occasionally foreign bodies will find their way into the mouth of the appendix. It is a wonder that they do not find their way into the appendix with much greater frequency. It is easy to understand how such bodies can produce inflammation, and it is quite as easy to understand how such bodies can evade the eye of either the pathologist or operating surgeon. Because they are not found is no argument against their presence.

It is scarcely probable that inflammation of the vermiform appendix can occur as a consequence of inflammation spreading from the fallopian tubes. The converse of this, however, is true. On two occasions I have seen pins in the appendix; each of these patients had a large abscess that formed in the neighborhood of the appendix. I have found foreign bodies in a number of cases; in one case, grape seeds; in another, an orange pit; in another, hardened fæcal matter around raspberry seeds. On one occasion I found the appendix dilated to the size of the little finger filled with fæcal matter, the walls so transparent that the fæcal matter could be seen through. In other cases the appendix is found diseased and distended with fluid. In such cases foreign bodies have nothing whatever to do with the production of the disease.

The disease is no discriminator of ages or persons. The proportion of men to women is as 89 to 21. The disease is of very frequent occurrence among children. I have seen it produce death at the age of three years and ten months; the oldest patient on whom I have operated was sixty-six years of age. She made an excellent recovery.

DIAGNOSIS.

It is a surprising fact that even medical men are unable to give us much information regarding the premonitory symptoms of appendicitis. One physician, on whom I operated, was taken ill at 4 a.m., with sudden severe pain in the abdomen. He became sick at the stomach and vomited. He rose in the morning and went out on his usual rounds. A doctor who saw him during the night thought that he was suffering from renal colic. When the pain abated the patient, feeling better, concluded that the diagnosis of renal colic was in all probability a correct one. After going around all day he was forced, towards evening, to take to his bed; in forty-eight hours he was dead. He died from perforation of the vermiform appendix and acute purulent peritonitis. In some cases a definite feeling of uneasiness may have been noticed for some time previous to the acute outbreak of the disease. Others suffer from lassitude. In one case I saw a large ulcer of the cæcum, together with a large abscess cavity, in a gentleman who died in a few hours after the symptoms of appendicitis set in. So much damage could not have originated in such a short period of time. I am satisfied, therefore, that in many cases the disease is progressing, a smouldering fire is hidden in the neighborhood of the appendix. But little is required to produce an acute purulent peritonitis. The acute symptoms in many cases will be similar to those of internal strangulation of the intestine. But, perforation of the appendix and acute peritonitis is a common affection, whereas internal strangulation is an extremely rare one. Though the two conditions give rise to very similar symptoms, these symptoms are generally dependent upon disease of the appendix.

The amount of pain suffered by some patients is much greater than that suffered by others. In one case in which the patient suffered severe colicky pains I found the appendix distended with fluid. There was no inflammation around the appendix, there were no adhesions. In some cases in which suppuration is going on, the pain is severe. The rigidity of the abdomen, especially on the right side, in the commencement of the attack of appendicitis is one of the most valuable symptoms. I am satisfied that the discovery of Mc-

Burney's point is of much clinical value. As a rule, however, if a healthy man is taken with sudden severe pain in the abdomen, together with rapid rise of temperature, he is suffering from an attack of appendicitis. In a woman the matter is somewhat different. Here we have the fallopian tubes continuous with the interior of the uterine cavity; they are very liable to inflammatory disease; such inflammatory disease on the right side will closely stimulate inflammation of the vermiform appendix. Acute inflammation of the peritoneum, in a large majority of cases, originates either in perforation of the vermiform appendix or from inflamed fallopian tubes.

Examination through the rectum is of great value in many cases. When the appendix occupies a deep position in the pelvis induration can be made out better through the rectum than through the abdominal wall. A diseased appendix may, however, be present in the abdomen and avoid detection during either single handed or bimanual palpation.

PROGRESS.

It is an amazing fact that patients may go around with a perforated appendix. A business man may be suffering from an ulcer of the cæcum and an abscess in its neighborhood and may suffer from no particular inconvenience. He will, perhaps, feel tired and chilly. After some sudden exertion has torn down adhesions, and has caused an escape of pus into the general cavity of the peritoneum, he becomes very ill. One of my patients was a man who rode into town every morning. He felt poorly for two or three days. Jumping down from his wagon one morning he noticed a sudden pain in the abdomen, but went all the way to town and back, and in three days he was dead. A large pocket of pus was found that had ruptured into the peritoneal cavity; an ulcer of the cæcum was also present, together with a perforated appendix. *I have met with one case in which a small ulcer of the cæcum existed, and the appendix was apparently in a healthy condition.* The previous attacks had, however, all the symptoms of attacks of appendicitis. A second perforation was only prevented by the adhesions of the ulcer to the abdominal wall. In a short time, no doubt, these adhesions would have given way as a natural consequence of the reparative process, and the ulcer would have again become pervious.

I have met with femoral phlebitis as an accompaniment of appendicitis. There is no doubt a form of the disease in which the veins of the mesentery of the appendix are inflamed, and septic material is poured into the blood in a large quantity; as a

consequence terrible rigors are produced. Though such cases are dangerous, they are not necessarily fatal. These chills are as severe as any met with in practice.

Sometimes the disease takes a peculiar chronic course. In one such case the side was as hard as a board and cartilaginous as a consequence of septic infiltration of the muscles. Pus pockets were opened up in four or five different localities; these pockets extended from the lower border of the liver to Poupart's ligament. The whole abdominal wall was brawny, and the cartilaginous portion cut through was in places nearly an inch in thickness. This disappeared, the abdominal wall became thin and flaccid, but the patient died from pulmonary tuberculosis some months later.

One elderly gentleman, sixty-one years of age, had had fifteen years of an interval between the attack for which the operation was performed and the previous attack. It is astonishing to see the ill-health that may be produced by a pus-bathed appendix. In several cases this ill-health continued without definite recurrences of the disease; the temperature had, however, been continually elevated. In some the temperature remains elevated to about the same point, while in others it jumps up much higher and falls lower. These patients never regain their normal robustness; they suffer from creepy sensations and a chilly feeling. The tongue shows no indication of ill-health; the bowels may perhaps move naturally. There seems little tendency in many of these cases for the pus to increase in quantity. *It is just a little pool from which the lymphatics drink.* They take up just enough poison to produce a deleterious effect upon the red blood corpuscles. Leucocytosis, as a consequence, is likely to be produced. In spite of tonics and stimulants, the condition persists, just as it does in cases of pyosalpinx as a consequence of the absorption of pus shut up in the fallopian tubes.

This condition of ill-health was well exemplified in one case of a little girl. She had been very robust, but never recovered from the primary attack of appendicitis. For eighteen months the parents were kept in suspense by her constant ill-health. Several recurrent attacks of the disease occurred. The parents were somewhat opposed to operative interference. At the operation I drew up a mass in which I found omentum adherent to a distended and club-ended appendix. After considerable difficulty the appendix was peeled off from the cæcum. The mesentery of the appendix in this case was turned inwards towards the median line—a very unusual position. This was tied off and the appendix removed in the usual way. From six to ten drops of pus were found at the tip of the appendix, around

its outer surface. In the interior was an orange pit. The patient has never had a day's illness since her recovery from the operation.

There are but few situations in the body in which such a small amount of pus will produce such a great effect upon the system.

Secondary rupture of the abscess wall into the peritoneal cavity usually takes place about the seventh to the tenth day after the commencement of the acute attack. In one case this happened about three weeks after the original perforation occurred. The gentleman was about three hundred miles away from home. He returned home during what was supposed to be a period of convalescence. He drove out with the physician, under whose care he was, and during the drive was suddenly seized with abdominal pain. The pain continued, the pulse and temperature became rapidly elevated, the abdomen became distended. I operated in the middle of the night; washed out thoroughly. An old abscess cavity was found in the neighborhood of the appendix, and a newer septic fluid was found in the general peritoneal cavity. The bowel was opened to relieve the distension. Even after operation has been performed, and after the distension has entirely disappeared, the patient may still succumb to the effects of the terrible poison introduced into the system. In some cases in which the poison is very great, the pulse and temperature remain low. The bowels become, as a consequence of inflammation, like a leaden pipe, they will absorb nothing. Towards the termination of the disease, the patient's pulse becomes rapidly elevated, and death ends the scene.

OPERATION.

Operation is performed in the acute stage of the disease, in the chronic stage of the disease, in the intervening stage of the disease, and also for the repair of damage subsequent to the subsidence of the disease.

First, let us consider operation during the acute stage of the disease. I have frequently seen cases that were apparently hopeless recover without operation, but I have yet to see the first case operated on, when in that condition, recover. This condition, in my mind contra-indicates operation in the light of our present knowledge. Damage to the peritoneum has already been great and operation cannot in any way assist us in averting the harm done. The shock of operation is thus added to the terrible prostration resulting from the disease. The cases to which I refer are those in which vomiting is excessive, perhaps stercoraceous and black, in which the abdomen is enormously distended, in which

hiccuph is present, together with a subnormal temperature and a pulse that ranges from 140 to 160. It is not even necessary that the pulse rate should be very high. The large majority of these cases succumb either with or without operation; once in a while, even when *not* operated on, to the surprise of every one, the patient may recover. After operation on such cases death ensues more rapidly than when they are left alone. Adhesions are disturbed, and the absorption of the septic material is facilitated. The condition dreaded after all abdominal operations is already present in the abdomen, and nothing at present known will save life. I have on several occasions opened the abdomen in two situations, namely in the median line and also over the site of the disease. I have washed out the abdominal cavity as thoroughly as possible, packed in gauze, and have also drained with tubes, and still the patients have succumbed.

In my earlier experience I endeavored to save some cases suffering from peritonitis following operative procedures, by re-opening and washing out the abdominal cavity, but without avail. It seems to me that in the future the only method by which such cases may be successfully attacked is by means of serum therapy. The poison that has entered the system is a very deadly one. The washing of so many coils of intestine alternately empty and then distended with gas, cannot prevent the recurrence of this absorption. Nothing but running water passing over the bowels so as to touch and wash off every portion can prevent reabsorption. The application of this running water is an impossibility according to our present belief. It might perhaps be possible to submerge the body of the patient in a bath of warm water after his abdomen has been split open from ensiform cartilage to pubic bone. I have not as yet had the courage to try it. The water would require constant or frequent changing. The intestines would be extruded from the abdomen. The theory of the shock of this may be a myth, and not a reality.

Even after operation has been performed and all distension has disappeared, the bowels still fail to move. The intestines become like a lead pipe, nothing is absorbed by them. In one instance I injected milk into the bowel through an opening that was made in the colon to relieve the distension. The milk, though peptonized, came back unaltered. Food taken into the stomach by the same patient was washed out by the stomach tube three and four hours after in an unaltered condition. The poisoning is so great in these cases that in spite of abdominal operation and the relief of disten-

sion, in spite of the fact that the patient's pulse may not exceed 100 beats to the minute, in spite of the fact that the temperature remains normal or subnormal, the patients die at the end of two or three weeks. The whole system is so intensely poisoned that the fatal issue cannot be warded off.

In one case, after making the incision, I found the appendix perforated and gangrenous, and evidently so gangrenous that a ligature would not hold. The parts about were invaded with septic material, thickened, angry, and reddened. There was no abscess cavity, and no pus was found. I concluded that as the appendix was extremely rotten it was not wise to attempt to remove it, and therefore packed the cavity with iodoform gauze to keep it open and permit the deleterious mass to escape externally. By this treatment the dangers of laceration of the intestine, of internal rupture, and of the introduction of septic material into the general peritoneal cavity, were avoided. The patient made an excellent recovery.

I have concluded from my later experience that in a certain class of cases it is wiser to make a simple incision through the abdominal parietes and do nothing more. The wound is kept open by iodoform gauze packing. Such an incision relieves the tension, and lessens the danger of an intra-peritoneal rupture of any localized collection of sero purulent fluid. The free incision favors an external rupture of such a collection. Every disturbance of the parts below endangers the patient by a further distribution of the poison. It occasionally happens that one operates on a case in which septic infiltration is so great that the intestines, peritoneum and omentum, look as if their tissues had been injected with a solution of gelatine. It is impossible to separate them from one another; they tear readily as a consequence of the friability of the tissue. In these cases a mere packing with gauze will prove of great value. A certain amount of irritation will be produced, and absorption of the inflammatory products stimulated. Convalescence is usually slow, but in many cases is ultimately perfect.

CHRONIC WITHOUT ABSCESS FORMATION.

I mean by this cases in which there is not a true abscess formation, but a few drops of pus situated somewhere around the inflamed and adherent appendix. It is not always necessary to find pus in these cases. Without pus formation I have found the health very much impaired.

In one case, that of a young lad, he had suffered from several attacks. I found the appendix firmly fixed over the iliac vessels,

with adhesions so dense that their separation would have endangered very greatly the continuity of the blood vessels. As a consequence it was impossible to remove the offending organ. On further examination the lymphatic glands were found enlarged in the mesentery, extending in a chain four or five inches in length, and simulating the glandular enlargement found in cases of malignant disease. A few adhesions were broken up. After the operation the patient's condition improved, and he is rapidly regaining his health. A few drops of pus may perhaps have been present in this case, and may have been overlooked.

OPERATION WITH ABSCESS FORMATION.

In opening into collections in the right iliac fossa, I always endeavor to keep my incision well out toward the bone, and to reach the pus accumulation from behind. Oftentimes the operator is led to believe that bowel lies in front of the mass, but the tympanitic note is often due to the presence of gas in the abscess cavity; the gas is particularly fetid. Though one abscess is opened into there may be another deeper in the loin. This may be overlooked, and should always be suspected if the temperature continues elevated after one abscess has been entered by the surgeon's knife.

I have washed out such abscesses with bichloride of mercury solution, per oxide of hydrogen solution, and carbolic acid solution, but have never washed out the general cavity of the peritoneum with anything but plain water. The simple drainage of these abscess cavities is all that is required. Two pieces of rubber tube are placed side by side, one perforated and the other unperforated. The water is washed down through the unperforated tube, and finds its way out through the one with the perforations. Although tubes are used, it is wise to assist drainage by packing gauze around them. It is unwise to make an opening for the purpose of drainage and then to close it.

In the majority of cases the appendix will be found to lie behind and toward the inner side of the sac wall. In cases in which there is pus formation in any considerable quantity it is wiser to leave the appendix *in situ*; an attempt to remove it endangers the rest of the abdominal cavity. These cases recover and remain well without removal of the appendix. If one is anxious to prevent the danger of a recurrence, the appendix may be removed in the intervening stage when the patient is in good health, and after all the inflammatory swelling has subsided.

I have opened an abscess communicating directly with the ap-

pendix just under the lower border of the liver, and also to the left of the median line, and in a third case just in front of the bladder about an inch and a half above the pubic bone. In these cases the appendix is found in an abnormal condition, or is found to be abnormally long. I have seen the appendix about four and one-half inches in length. In several cases I have found it to be almost entirely intra-pelvic. In such cases the pus will have a tendency to burrow downwards. The amount of pus found varies very much. In some cases the abscesses will burrow into the loin until they reach the diaphragm; in other cases but a few drops of pus may be found. I have seen a pus pocket freely moveable in the abdomen. This pocket was found in the centre of a small mass consisting of adherent omentum, appendix, and intestine. These adhesions produced a lump that could be readily moved from side to side. Had it not been that the attending physician had vouched for the original presence of appendicitis, I should certainly have been inclined to look upon the enlargement as a neoplasm. The elevation of temperature present in such cases should assist one in distinguishing between inflammatory disease and new growth. Two cases of malignant growth in the interior of the cæcum gave rise to a moveable nodular hard mass in the same locality.

Death as the consequence of internal hæmorrhage from ulceration into a blood vessel in the neighborhood of an inflamed appendix is a rare occurrence. One patient on whom I operated died from hæmorrhage from perforation of one of the vessels in the meso-appendix or meso-colon. I opened an abscess in the right iliac fossa. The patient was a young woman who had been ill for a week or ten days, and had all the symptoms of appendicitis. After the operation she did well for twenty-four or forty-eight hours when blood was poured out through the gauze packing. This hæmorrhage continued in spite of the injection of astringents into the abscess cavity. At the post-mortem examination it was found that a blood-vessel had given way. One of my confreres had a similar experience; his patient died from hæmorrhage from an appendiceal abscess.

Gas and pus frequently escape from these fæcal abscesses and in a short time fæcal matter may come away. A fæcal fistula is thus formed which usually closes without operative interference. When gas is present I have generally considered it to indicate a perforation. In one case I removed double pus tubes together with an inflamed, adherent, and perforated appendix that was surrounded by a few drops of pus, and, in the same patient, opened into a second-

ary phlegmon on the left side of the abdomen. This secondary phlegmon had remained after the original attack of acute general peritonitis from which the patient almost lost her life. It was formed by very much thickened omentum that was adherent to the the anterior abdominal wall. Packing was introduced, after the appendix was removed, into the incision in the median line and also into the incision into the secondary phlegmon to the left of the median line. The two were made to communicate with one another so that solutions injected into the one opening found their way out through the other. The patient recovered and is now in perfect health.

In another case I found a large fibroid tumor in the pelvis and to the right a large pus tube curled across toward the left side. In front of all was a mass from which pus exuded, and on exploring it more carefully I found that a diseased appendix had caused this intra peritoneal abscess beneath the omentum. On the left side the fallopian tube was somewhat enlarged and adherent. Both tubes and ovaries were removed, the abscess was peeled off from the bladder after a sound had been introduced into that organ to act as a guide to the external finger and the site of the abscess was thoroughly packed with iodoform gauze. The omentum was tied off by interrupted sutures, the abdomen washed out, and the patient made a good recovery.

OPERATION IN THE INTERVENING STAGE.

I have never yet lost a patient as a consequence of operation performed in the period intervening between the attacks. For these operations I endeavor to put the patient in first-class health. Such a patient rode to my office one evening on his bicycle and asked to have his appendix taken out next day. He went to the hospital direct from my door and next morning I operated. The vermiform appendix was found fixed with old adhesions and was removed. He has been in first-class health since. Previous to operation he suffered from several attacks, and in one of them nearly lost his life. The condition that we find at these operations does not indicate the severity of a previous attack.

I have met with one case of cystic distension of the appendix. The patient suffered from appendicular colic. The fluid contained in the cyst looked like mucus. It was not stained with bile. The wall of the appendix was like that of a fallopian tube when distended in the disease known as hydrosalpinx. The name *hydrops processus vermiformis* may very properly be applied to this condition.

I have found the tip of the appendix almost entirely separated from the rest of the structure and obtaining its nourishment from its new attachment. From my experience I have come to the conclusion that no surgeon can say that one case should be operated on and another should be left unoperated on after a primary attack of appendicitis. Those who operate the most will be easiest convinced that this assertion is correct. As in one case related above nothing may be found standing between the patient and the grave but a few adhesions of a cæcal perforation to the abdominal wall and yet there may be nothing to indicate the condition present. I have recorded one case in which there were fifteen years of an interval between two attacks. The physicians who discussed the case during the first attack had in all probability passed away before the second attack occurred.

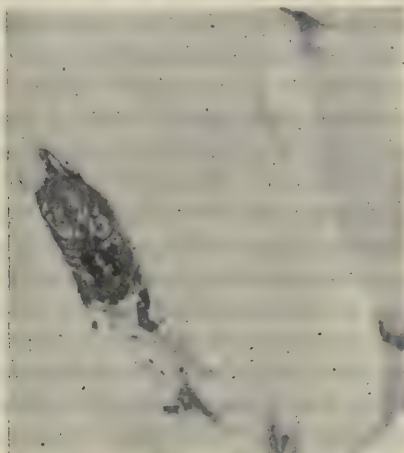
OPERATION FOR REPAIR OF DAMAGE SUBSEQUENT TO THE
SUBSIDENCE OF THE DISEASE.

Four conditions may exist after operation. First, fæcal fistula ; secondly, an unhealed sinus ; thirdly, prolapse of the bowel through an unhealed ulcer ; and fourthly, a hernial protrusion of the abdominal contents. The fæcal fistulæ heal, as a rule, without operative

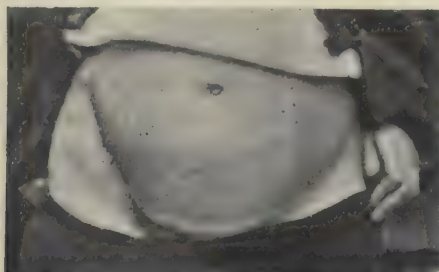


interference. Small sinuses are usually due to the presence of an infected ligature, and they may not heal until the ligature is extruded. Prolapse of the intestine is a rare complication. I have seen two cases. Of one of these I show photographs, which were kindly

made for me by Dr. Weir, of the General Hospital staff. The patient was operated on on five different occasions. She suffered originally from an attack of appendicitis ; abscess formation occurred. This was not opened, and she lay for some months without any surgical interference, and during this interval became profoundly septic. I



opened the abscess after her arrival at the hospital. Fæcal matter poured out together with pus. After a time the abscess wall disappeared, but sinuses were found running towards the pubes and up into the loin ; they were opened and scraped and packed with gauze. Patient was then allowed to return home. Three ulcers in the cæcum and ascending colon still remained, and all her evacua-



tions took place through the loin. An attempt was made to close the perforations ; one healed, the other two did not. She very nearly succumbed on the table owing to her weakened condition and the effects of the anæsthetic. After a year at home her weight increased

from 100 to 135 pounds, and she then returned for the final operation, looking healthy and strong. The operation was one of considerable magnitude. The ascending colon was torn away from the abdominal wall and two large ulcers were closed. The prolapsed intestine is well shown in the accompanying photograph. The suture of the skin was difficult owing to the contraction produced by the shrinkage of the scar tissue left from previous operations. The result of the operation was perfect. The young lady has returned home relieved from all her terrible discomfort.

In another case of a little child I closed a large ulcer of the cæcum through which all evacuations were occurring. Not wishing to disturb the parts any more than necessary, I carefully closed the opening into the intestine and then closed the abdominal wound. The patient did not do well and died. She was in a wretched condition at the time of the operation, and to prevent shock I endeavored to remove her from the operating table as quickly as possible; by doing this another ulcer of the colon on its posterior surface was overlooked. The ulcer was found communicating with a small abscess cavity near the spine. During the performance of the operation a disturbance of the adhesions had taken place and an escape of enough pus to set up a general peritonitis was permitted.

The lesson learned was that a thorough examination of all the intestines in the neighborhood of a perforation should be made so that a second opening may not be overlooked.

INTRACRANIAL SYPHILIS.—TWO CASES WITH REMARKS.*

BY ALEXANDER MCPHEDRAN, M.B.

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PETER M., æt. 35, a teamster. Twelve years before this illness he had a hard chancre, followed by mild secondary symptoms for a year afterwards. He received irregular treatment during this time, and then ceased taking medicine. He observed no further symptoms. He was well until the summer of 1894, when headache became troublesome, worse at night, but he was able to continue at work. He had lost appetite. About a month after the headache began he woke up one morning to find his left side partially paralyzed. He was able to move about a little. His face and tongue were somewhat affected. In a few days he began to improve, and in a week he thought he was nearly well. Then his right side began to grow weak, and in three days was almost completely paralyzed. Speech was much affected, but he was able to make himself understood. Next day he was brought to St. Michael's Hospital. Potassium iodide was given freely and inunctions of unguentum hydrargyri daily for two weeks, when he was able to go about well and make some use of the right hand. He improved somewhat for a few weeks and then his condition became stationery. Later the arm and leg became increasingly spastic as always follows destructive lesions of the motor tract in the internal capsule. He left the hospital at the end of six months in this condition, and without hope of further improvement.

Case 2.—Mrs. J., aged 53. Her personal and family history is good. She has had four healthy children, all living. In the summer of 1894, epithelioma appeared in the right shoulder. It was removed by application of pyrogallic acid, 10 per cent.

In February, 1895, she began to be troubled by pain in the temples lasting 2 or 3 hours. Some days she was free of pain. In

* Read at the Meeting of the Ontario Medical Association, held at Toronto, June 2 and 3, 1897.

March the pain recurred daily, but without regularity as to time, or degree of severity. On some days it was extremely severe. In April the attacks began with chill with some of which there were marked rigors. Sometimes there were two chills in a day, usually in the afternoon or at night. After the chills the temperature would sometimes rise to $104^{\circ}+$, but there was no regularity in its range. It always fell to normal soon after the chill, and remained so, at least until the next chill occurred. The urine was always of low specific gravity (1010—1012) but otherwise normal.

In May a slight swelling formed on the left frontal eminence, and as this indicated a syphilitic origin, potassium iodide was given freely, and the chills and pain were promptly relieved and the frontal swelling disappeared.

After careful enquiry as to the history the husband recalled the fact that seventeen years before this time, when their youngest daughter was a babe, his wife had nursed a neighbor's infant out of charity and to save its life. In a short time a sore appeared in the nipple requiring two months to heal. The family physician told him it was syphilitic, but this was kept secret from his wife. She was treated for some time, and she had no secondary eruptions or other trouble until the head symptoms developed in 1896—seventeen years after infection.

These two cases illustrate, each in its own way, the striking features of intracranial syphilis. In the first one there was syphilitic endarteritis, with temporary interference with the circulation in the right hemisphere, causing sudden paralysis of the left side. The disturbance in the left hemisphere a week later was of more grave character, thrombosis no doubt occurring, leading to degeneration of the internal capsule, resulting in some permanent paresis of the right side of the body. Endarteritis may follow as early as four months after syphilitic infection, but usually it develops between the fourth and eighth years, although it may occur as late as the twentieth or even the thirtieth year.

The second case represents a less common variety of intracranial syphilis. In it the meninges appear to have been affected either with simple inflammation or the formation of gummata, or more likely by both. Such lesions form about the same time as the endarteritis, but are much less frequent.

In a third class there is chronic diffuse sclerosis of the brain, as occurs in paralytic dementia or general paresis; if the disease invades the spinal cord the posterior columns are affected and tabes dorsalis results.

The first and second groups include the great majority of cases of intracranial syphilis, and in neither of these is the nerve tissue primarily the seat of syphilitic disease. In the first the brain cells and fibres suffer only as the endarteritis cuts off their blood supply, causing them to undergo degeneration from lack of nourishment. In the second group the nerve tissue does not suffer until the gummatus or inflammatory exudates attain such a size as to press upon the brain and arrest the blood supply to the tissue in contact with the exudates.

Thus, as syphilitic affections invade the brain by way of the arteries or the meninges, it follows that the process is at first wholly outside the nerve elements themselves. If these suffer later they do so in the first place from compression by the gummata, or from the inflammation adjacent to the gummata, as they would from any rapid growth; in the second place they suffer from the syphilitic disease in the arterial walls interfering with their blood supply, terminating it may be, as in this case, in thrombosis. In either case the degeneration of the nerve cells and fibres is secondary to the interference with the blood supply.

If by treatment we can arrest these processes in the vessels and meninges and remove the exudates—inflammatory and gummatus—that have been produced before any nerve elements are destroyed, a complete cure is effected. In some cases these processes are of very rapid development, especially when occurring early after infection in younger persons; usually, however, the processes are developed comparatively slowly, and, the brain accommodating itself to the altered local conditions, symptoms may not present themselves until advanced changes have occurred, changes that cannot be removed without permanent damage at least to arterial walls or meningeal tissue.

If nerve elements have been injured by the exudation whether inflammatory or gummatus, removal of the exudation can do no more than permit the recovery of the injured structures; if they are injured beyond recovery, removal of the exudation can do them no good. In other words damaged tissue may be wholly restored, if the cause of damage is removed before the vitality of the elements is lost; in structures that have undergone destruction, restoration is of course impossible, as it is anywhere else in the body, and the effects of the loss of tissue remain where compensation cannot be effected.

Our aim in treatment is to secure removal of the irritation and the exudate resulting from it, and thus allow the injured tissue to

return to its normal condition. This is the most that we can accomplish ; we are powerless to promote the repair of the injured tissue. This is, of course, true of diseases elsewhere as well.

Probably most of the affections of the brain occurring in the secondary stage of syphilis are due to disease of the blood vessels, but no distinction can be drawn between early and late lesions as to their histological characters, although the early lesions are usually more acute, and give rise to symptoms more acute and general. Some of these cases rapidly develop stupor and pass into coma, from which they may rouse up and become violently delirious with convulsions and paralysis, terminating fatally. This is, however, rare.

The liability of the intracranial structures to become diseased after syphilitic infection seems to be quite as great when the early symptoms have been mild as when severe ; some believe the liability even greater. Possibly this greater liability, if it exists, is due to the less thorough and persistent treatment that the mild cases usually receive.

The general prognosis in cerebral or intracranial syphilis may be fairly stated in the following propositions :

(1) The longer the period of incubation the worse the prognosis, the usual period being between five and eight or nine years. It may be as early as three or six months after the initial sore, or as late as twenty-five or even thirty years. Cases in which the symptoms of cerebral disease do not appear until after the twentieth year probably never get well.

(2) The longer the cerebral symptoms have existed before vigorous anti-syphilitic treatment was begun the worse the prognosis. If five or six months or longer has elapsed, no good can result from treatment.

(3) Cases that manifest *general symptoms*, such as headache, vertigo, and epileptiform convulsions, are generally more favorable than those with *focal symptoms*, as paralyzes of certain nerves, hemiplegias, etc.

(4) The worst prognosis is in those presenting such general nervous affections as tabes, and general paralysis of the insane.

The relation of treatment to the prognosis is important. There is marked difference in opinion as to the possibility of preventing lesions of the intracranial structures by the most careful and thorough antisymphilitic treatment, carried out under favorable conditions. Some believe that not a few cases of syphilis are incurable, and of course such cases are liable to cerebral lesions. There is no

doubt, I think, that a relatively large number of cases of intracranial disease occur among those with mild so-called "secondary" symptoms, if they do not escape such symptoms altogether. This has, however, been attributed to the want of proper treatment in many of these cases.

In support of the theory of the incurability of some cases of syphilis there is the fact that it is not rare to meet with cases in which the more usual symptoms are wholly uninfluenced by treatment. As in other diseases some are much more susceptible to the cause of the disease, so in syphilis some offer much less resistance to the virus, and even with treatment are unable to overcome its power. So that I am quite with those who look upon the disease as essentially incurable in certain persons. In a large number, again, the disease is curable if efficiently treated, while probably in a much larger number the disease disappears spontaneously because the virus, a micro-organism doubtless, has not possessed sufficient virulence to overcome the resistance of the tissues.

Prophylaxis against cerebral invasion is of the utmost importance, and should be accomplished, as far as possible, by thorough and long-continued treatment after infection. It is the part of wisdom to follow such treatment by two or three short courses of potassium iodide annually for many years, in order to anticipate any affection of the meninges and arteries of the brain.

For the removal of symptoms of intracranial syphilis, potassium iodide is our most potent remedy. It is more powerful in the removal of inflammatory and gummatous exudates than mercury, but the latter is also useful. In view of the importance of arresting the disease in the vessels and membranes of the brain, and of removing all exudates that have been formed before the nerve elements suffer, our treatment should be prompt and vigorous. If there be delay or inefficiency in treatment, irreparable damage may be done to brain tissue.

On the first symptoms of the coming disaster presenting themselves treatment should be begun as, *e.g.*, mild recurrent headache, for which a definite cause cannot be found. Such a headache may be the precursor of a grave intracranial lesion. The iodide should be given freely beginning with 10 or 15 grains and increasing rapidly until 40 or even 60 grains are given three times a day. It should be given with an abundance of water; it is often best borne in aerated water.

Objection has been taken to such large doses of iodide of potassium as likely to increase the liability to thrombosis in the diseased

vessels as it increases the fibrinosis of the blood, but it is very probable that the great benefit to be derived by such free administration will much more than counterbalance this doubtful risk.

After three or four weeks of treatment the iodide should be omitted for two or three weeks, as the tissues become tolerant and the continuance of the drug ceases to have effect. By intermitting its use, however, marked benefit is often observed to follow when it is again resumed. In these intervals mercury, either internally or by inunction, should be resorted to, in order to leave no resource untried that may aid in preventing damage to the cerebral tissue.

A PLEA FOR THE RADICAL OPERATION FOR HERNIA AMONG THE INSANE.*

BY A. T. HOBBS, M.D.

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THE mechanical displacement of normal parts of the abdominal wall, the protrusion and progressive prolapse of abdominal viscera, the sequential formation and elongation of its covering of peritoneum, make up the history of the advent and growth of a hernia.

Concurrent with its development are discomfort and pain, often so severe as to disable the patient from pursuing any active employment. This and the consciousness of the ever present danger from impaction of the contents of the hernial sac and its consequent strangulation tend to make the future of the affected individual an unenviable one.

Hernial protrusion of the inguinal type is the prevailing form of abdominal rupture, affecting the male sex more frequently than the female, no doubt because of certain inherent defects of the larger and more patulent male inguinal canal; and, also, because of the difference in vocation, demanding greater physical activity.

The percentage of hernia occurring among the male population of this northern continent has not been ascertained. In the Asylum for the Insane at London, with which I am connected, out of some five hundred male patients 7 to 8% have hernia. Taking this percentage as a basis and estimating the male insane population of similar institutions of Canada and the United States at 90,000 there exists at least some 6,000 patients who have the additional burden of a rupture to render more miserable their otherwise often hopeless condition.

The management of this complication in the insane by the ordinary palliative method as used by the profession at large, viz.: by the adjustment of a well made and perfect fitting truss and the constant application of such mechanical support is an

* Read before the meeting of the Ontario Medical Association, Toronto, June 27.

almost entire failure. Many insane patients having little or no self control, finding a truss hurting or chafing them in the slightest degree, destroy or throw it away without the least compunction. Others again have an aversion to the truss and cannot be induced to wear one. Some who wear trusses tamper with them so that their original appearance is lost and their utility as a mechanical support is rendered null. One patient managed to adjust the head of his truss at such an angle that an opposite deformity was produced and instead of the usual protruding rupture, there appeared on the abdomen a large inflamed cavity. Another patient, having a mechanical turn of mind, thought he would improve his support. He enlarged the head and increased the band to such an extent that it became an instrument of torture instead of one of relief. The inguinal region presented such a mass of thickened and hypertrophied tissues that his was the only case in which it was impossible to follow out the steps of the Bassini operation and as a consequence the only hernia, which after operation, shows any tendency to return. Another who had a truss, but had thrown it away, tried to retain the contents of the hernia in its original cavity by adjusting a long woollen comforter, knotted and twisted, around his waist and thigh. Needless to say his ingenuity failed to overcome the difficulty.

Impaction of the contents of the rupture occasionally occur in these patients and prompt interference aided by anæsthesia is necessary to save them from strangulation. When you consider that a majority of these patients, although chronic and hopeless lunatics, maintain good physical health, and are likely to live to a good old age, and that many of them do useful work on the farm and gardens, and in the workshops of the institution, you will admit that some attempt should be made to relieve them permanently of this cause of annoyance, thereby rendering their existence a little more comfortable, and relieving them from this source of danger, which at any time might place their lives in jeopardy. In my experience you can confer no greater boon on these unfortunate fellows than by getting rid of such an incumbrance.

The question now presents itself as to the best method of treatment in these cases. The use of the mechanical support, as I have shown is a poor solatium. There remains then only one avenue of relief from the thralldom of rupture, that of surgical interference. The possibility of successful operation in

hernia on the insane is, I think, fully demonstrated by the good results obtained in thirteen out of fourteen cases that have been operated on in London Asylum during the past two years. The surgical method followed out in the thirteen successful cases followed closely the lines laid down by Bassini. Deviation from his method occurred only in some minor details that suggested themselves as improvements as the work progressed. In the earlier cases drainage from the lower angle of the wound was adopted for the first twenty-four hours. Latterly, however, better success has followed the complete closure of the wound after thoroughly drying out each layer before suturing, and then sealing by dressings which are not disturbed, unless interfered with by the patient, or because of temperature indication, until the removal of the superficial sutures at the end of the first week. Interrupted sutures of kangaroo tendon for the deep layer and a continuous suture, also of tendon for the middle layer were used in all cases, after tying off and cutting away the sac at the internal ring.

A résumé of the fourteen cases records the variation in hernial contents and the causation of any retardation in recovery:

Cases 1, 5, 7, 8, 10, 13 and 14 or 50% of those operated on were of the usual order and their convalescence uneventful.

Case No. 2 had a hydrocele of the cord complicating his hernia. The cyst was emptied and injected with iodine.

Case No. 3 had an empty congenital sac alongside the hernial one. He was very restless during convalescence and removed the dressings nearly every night, hiding them in his bed. Some pus formed in the upper angle of the superficial wound during the second week and had to be let out. Complete recovery rapidly followed.

Case No. 4, had an old hæmatoma filling one side of scrotum, complicating his hernia. The left testicle had entirely disappeared. The tumor was removed at the time of the hernial operation. Recovery was uneventful.

Case No. 6. The contents of the sac embraced some coils of the small intestine, the cæcum, and the appendix. These were returned into the abdominal cavity. Owing to the mesentery of the appendix and cæcum being attached to the peritoneum at the internal ring, the sac had to be opened up to the neck and a purse string suture applied to close off the abdominal opening. The after results were good, primary union in the wound taking place.

The only failure to carry out the technique of Bassini and the only case in which the hernia showed any tendency to return was in No. 9. This was the patient who had re-constructed his truss on his own ideas, with the result that he had injured the parts over the inguinal region and caused such an hypertrophy of the cord that it was found impossible to complete the operation on the same lines as were carried out in the others. The sac was tied off, removed, and the parts replaced in the normal situation and sutured.

Case No. 11 progressed favorably until the eighth night succeeding operation when from some unknown cause hæmorrhage occurred beneath the superficial fascia, elevating the skin, making tense the whole length of the wound, forcing its way out through the partially united incision, saturating the dressing and sheets. The patient, a very restless fellow, seemed indifferent to this state of affairs and it was not noticed until the day nurse attended to his wants. Then the superficial incision was reopened for three or four inches and a handful of clots removed and the wound packed with gauze. The cavity closed up rapidly and results are so far good. This was the patient whose truss had made a cavity for itself in the abdominal wall and which was taken away from him a month prior to the operation so as to allow the parts to regain as far as they would their normal contour.

The operation in case No. 12 seemed to point to complete success, but on the fifth day the temperature ran up to 103° , remaining elevated for two or three days, while some tenderness and hardness appeared at the site of the internal ring. It was thought advisable to put the patient under an anæsthetic and to re-open the wound at the upper end. This was done, allowing of the exit of a quantity of foul smelling pus which had collected in the neighborhood of the stump of the sac and had seemingly burrowed some distance into the wall of the pelvic cavity, simulating an appendicitis. Infection from some source must have been introduced at the time of the operation in spite of every care. Insertion of a drainage tube packed around with gauze was followed in a short time by closure of the abscess cavity.

These patients were kept in bed for at least three weeks succeeding operation. Œdema of the cord, varying in amount, occurred after each operation. This, however, gradually subsided in the course of a month or two, recovery being hastened by the use of a testicular suspensory bandage, when the patient was on his feet.

The fourteen cases were equally divided as to region, seven being left inguinal and the remainder right. The after treatment of these cases (as already detailed) required constant care and close supervision of trustworthy and intelligent nurses. Difficulties that at first seemed insuperable have, by patience and experience, been gradually surmounted. Age made no difference in deciding on operation, providing the patient was in good general health, and the functions of the body were in fair order. The ages in the fourteen cases ranged from 30 to 72. No mental improvement was expected as a result of the operation and none occurred.

The advances made in modern surgical technique and the perfection that aseptic surgery has attained make possible and practicable the operation for radical cure in at least 90 per cent. of all cases of hernia. By the operation physical comfort is greatly enhanced, as is equally the capability of the patient for useful work. I see no valid reason why operative treatment should not be adopted in all similar institutions to that at London which are devoted to the care of these national wards.

The principal lesson taught by our experience, as above given, is that, whether in the insane or sane, operative interference in these cases is attended with but a minimum of danger and may be so conducted as to be almost uniformly successful, and that in the vastly greater number of cases of hernia, and especially where this exists in the insane, it is much preferable to the old method of treatment by a truss.

ADDENDUM.

Since writing the above two more cases of hernia have been operated on for radical cure: One being a right inguinal and the other a left femoral hernia. The history of the latter emphasizes the need of early operation in these cases. On June 12th she was observed to vomit, once only, by her cottage attendant. No recurrence of the sickness being noted it was put down to an attack of biliousness. From this time up to June 16th no especial notice was taken of her as nothing unusual was apparent; but on the morning of that date the patient had an attack of syncope. Her medical attendant, Dr. Buchan, was immediately notified and on examination found a fair size tense tumor on the right femoral region, on the lower border of Poupart's ligament. She was at once transferred to the infirmary and in an hour's time operation was proceeded with.

The hernial sac was filled with a reddish serum and a distended coil of the small intestine about eight inches long which, at this time, was a dark purplish color. The constricting band was the neck of the sac itself and not Gimbernat's ligament. This band was incised and the protruding bowel and mesentery were gently drawn out, freeing the strangulated portion. For some thirty minutes a hot normal salt solution was poured on the injured section with the object of revivifying the stagnant circulation and re-inducing peristaltic action which was absent in affected part. At the end of that time the exposed viscera was replaced and the abdominal cavity filled up through the opening with a salt solution. The edges of the ring were united to Poupart's ligament by sutures of Kangaroo tendon and the wound closed with silk worm gut. She recovered without a bad symptom.

Selected Articles.

SUBMAMMARY INFUSIONS OF SALT SOLUTION IN PRIMARY ANÆMIA FROM HÆMORRHAGE IN SHOCK AND IN SEPTIC INFECTION.*

BY J. G. CLARK, M.D.,

Resident Gynæcologist in the Johns Hopkins Hospital, Baltimore.

HÆMORRHAGE AND SHOCK.

FOR the last two years we have employed in the gynæcological department of the Johns Hopkins Hospital submammary saline infusions in every case where there has been the slightest symptom of depression after operation, or of shock from the loss of blood in surgical or puerperal cases. The first case in which we had occasion to use this means of reviving a patient from the effects of a profuse hæmorrhage demonstrated its value as a certain and rapid stimulant. The patient was admitted to the gynæcological ward one afternoon, suffering with light labour pains and a slight hæmorrhagic flow from the uterus. Examination: Vaginal mucosa of a slight purplish hue; cervix soft and slightly dilated; uterus enlarged to size of a three months' pregnancy. Diagnosis: pregnancy; threatened miscarriage.

The patient was put to bed and a small dose of codeine administered in the hope that rest and sedative remedies might avert a miscarriage. The pains ceased towards evening and she slept well in the early part of the night, but was awakened about midnight with severe labor pains, which terminated, before an interne could be summoned, in the expulsion of the foetus and a portion of the placenta. Immediately after the miscarriage the nurse observed a profuse flow of bright red blood from the vagina. By the time I reached the ward, twenty minutes after the miscarriage, the patient was in a very serious condition, her pulse being 140 and feeble, and there were many signs of severe anæmia. The cervix was dilated

*Read before the Gynæcological and Obstetrical Society of Baltimore.

only enough to permit the introduction of the tip of the index finger. It was at once evident that nothing could be accomplished in removing the retained membranes without instrumental dilatation of the cervix and curettage, so the vagina and cervix were hastily tamponed and the patient was hurriedly transported to the operating room. No time was lost in the operation, but at its completion the patient was in extreme collapse. Her pulse was almost imperceptible, the respirations were short, jerky and irregular, and the mucous membranes were excessively blanched.

Previous to this case infusion of salt solution into the radial arteries had been used in offsetting the effects of hæmorrhage, but in this instance it could not be employed. The pulsations of the artery were so feeble that they could not be felt, and therefore no guide to the location of the vessel. After a tedious search the artery was found, but its lumen was so small that neither the infusion canula nor the smallest aspirating needle could be inserted.

In this extremity Dr. Edebohl's plan of infusing salt solution beneath the breasts came to my mind. An aspirating needle was inserted well under the mammary stand, and the reservoir containing the salt solution, 0.6 per cent., was elevated six feet above the bed. The pressure was not sufficient, however, to force the fluid into the tissues, and we forced air into the closed reservoir with the reversed aspirator. Seven hundred centimetres of solution were forced in under one breast, after which a similar amount was injected beneath the opposite breast. Within twenty minutes from the time the salt solution began to flow into the first breast the patient's pulse began to show a marked improvement, and in one hour and a-half her condition was so much better that we felt relieved of all anxiety about her.

The plan worked with such signal success in this case that Dr. Kelly at once abandoned the radial infusion, and we have now employed submammary infusion in 41 of the last 225 cases of abdominal section. In many of these cases there was very slight indication for stimulation of any kind, but the simplicity of the procedure and its freedom from bad results of any kind have so commended it that no patient is allowed to suffer from symptoms of depression or shock without its employment. Of the 41 cases thus infused none of them have suffered with so much as cellulitis.

PUERPERAL AND GENERAL INFECTION.

While our experience has not been extensive in the treatment of infectious cases with saline infusions, I think the following report

of a case, taken in conjunction with the recent favourable literature on the subject, especially in the French papers, points very strongly to it as a highly useful remedy. In observing the case, one of puerperal sepsis, there was no doubt in my mind as to its value from the time the first infusion was given, and each infusion thereafter only confirmed this opinion. The patient was a robust coloured woman, who had been a patient in the hospital once before when she was operated upon for a ventral hernia, which recurred soon after her discharge from the hospital. The hernia grew in size, and the patient again returned to the out-patient department, where she was examined by one of the junior assistants, who found a wide diastasis of the recti muscles, which was filled in by a hernical sac containing a pyriform tumour lying almost entirely outside of the peritoneal cavity. The case was sent into the hospital for further examination, and the tumour proved to be a five-months' pregnant uterus. The patient was given a supporting bandage and asked to return to the hospital for her confinement, as we wished to see what progress labour would make without the assistance of the recti muscles. She entered the hospital in December, 1895, and was delivered in a few days of a large, dead, macerated child which came in breech presentation. The great diastasis between the recti muscles, which prevented their active participation in the expulsive efforts, did not seem to retard the labour in the least. The placenta came away intact, but the uterus was still very large, the top of the fundus being situated above the umbilicus. The uterus did not show any tendency to contract for several days. The day subsequent to her labour the patient had a temperature of 100°F. , which ranged for the next three days between this point and 101°F. and then suddenly ascended to 104°F. in the morning, but again went up to 105° in the afternoon. That evening the patient was taken to the operating room and anæsthetized. On examination the uterus was still found very large and the cervix easily admitted the index finger. A thorough digital exploration of the interior of the uterus showed it to be perfectly smooth, and there was not the slightest trace of pathological tissue detected. Consequently, with the exception of a very thorough irrigation with sterile salt solution (0.6 per cent.), nothing further was done. For the next two days a continuous current of sterile salt solution was kept flowing in and out of the uterus, in the hope that it might facilitate the elimination of the infection, but it did not seem to affect the temperature in the least and was discontinued. While the temperature would rise as high as 105.5°F. , and at one time to 106.5°F. , the

patient's pulse remained moderately good, considering the grave infection from which she was suffering. The seventh day after she was anæsthetized, however, it showed marked evidence of failure, becoming rapid and intermittent, very feeble and at times almost imperceptible.

By this time the patient's general condition had become very bad. She vomited all of her nourishment, her eyes were sunken, and she presented all of the appearance of impending death. At this time we decided to employ submammary saline infusion as a cardiac stimulant and for its diluent effect upon the toxins. A litre was first given, and the improvement was most gratifying. The patient felt much more comfortable and her pulse dropped from 100 feeble, intermittent beats to 76 good full regular beats. Little or no change, however, was noticed in the temperature, which continued high for three subsequent days, when it began to fall; but the relief was so perceptible, even to the patient herself, that she requested a repetition of the treatment. A litre a day was given for seven days, and each time a marked improvement in the pulse was observed. The patient from the first infusion began to improve and finally recovered perfect health.

My attention was called to the subject by a recent editorial in *The Medical News*, in which the work of Claisse* and Bosc† was reviewed. I quote from the editorial in reference to septic infection cases as follows: "Take a patient suffering from severe infection—puerperal, for instance; all organs are affected and are working badly, the temperature is about 104° F.; in ten minutes 1,300 to 1,400 grammes of saline solution are injected subcutaneously. Before half that amount has been reached the improvement is manifest. The pulse becomes more regular, fuller, and stronger; respiration is deeper and less hurried, and possibly the temperature falls a degree at the end of the injection." "The patient feels better, is brighter, and possibly desires to urinate, but not any great amount. Usually, the patient now enters what is known as the critical stage, which comes on generally in four or five minutes, though it may be delayed to half an hour. There is a violent chill, with sensations of extreme cold, strong, rapid pulse, and a rapidly rising temperature." Following this the patient goes through a fevered stage, from which she emerges, the temperature falls, and she may have no further trouble."

In the case which I report, the symptoms correspond to those which Bosc narrates, with the exception of those of the critical

* *Revue de Chirurgie*, 1895.

† *La Presse Médicale*, 1895.

stage, which we did not observe. The patient was so extremely ill that these symptoms may have been masked and thus escaped notice. Her temperature showed only the slightest signs of improvement at first, but the pulse became decidedly better after each infusion.

So far we have seen none of the toxic effects which can be produced in dogs by the injection of large quantities of saline solution, and I do not think they need be considered, as in the experimental studies very much more of the saline solution, compared with the bodily weight, is used than in the human being. Certainly there is no occasion for fear of untoward symptoms from the injection of one or even two litres of saline solution at one time.

Several theories are advanced to explain the beneficial effects following these infusions, but they are all hypothetical, and I will not quote them. An article in *The British Medical Journal*, July, 1896, reviews the reports of Duret, Sahli, Maygquier, Lejars, Chasseranny, Toffier and Proben, all of whom have reported cases of septicæmia, surgical shock and hæmorrhage improved by the saline solution.

METHOD OF INFUSING SALINE SOLUTION.

Graduated glass infusion jars of one thousand cubic centimetres capacity, made according to Dr. Kelly's designs, are used as reservoirs for the solution. The bottles are connected by five feet of rubber tubing to a long, slender infusion needle, the calibre of which is two millimetres in diameter, similar to an aspirating needle. The entire apparatus is sterilized and kept in a sterile envelope and is available for use at any moment. Before giving the infusion the breast is carefully disinfected, especially well in its dependent area. It is then grasped with one hand and lifted well up from the thorax, while the needle, with the fluid flowing from it, is quietly thrust beneath the gland. Usually, simple elevation of the reservoir is sufficient to force the fluid into the loose cellular tissue, and the breast quickly begins to distend until even a flabby and atrophied organ will reach the size of the puerperal breast, and in a few instances I have seen the fluid shot from the rubber when the breast is quite tense. The needle is quickly withdrawn and the puncture is closed with rubber tissue or adhesive plaster. If the fluid does not flow by its own pressure it can be effectually forced in by stuffing the tube. The hands and tube are well anointed with vaseline; the upper portion of the tube is tightly pinched, and from this point down the tube is gently stripped between the fingers of the other

hand, driving the column of fluid ahead into the tissue. The lower portion is then pinched between the fingers and the upper is released, allowing the water to fill the collapsed intermediary portion of the tube. Seven hundred cubic centimetres of solution may be injected under each breast. If care is observed in the cleasing of the breasts and the injection of the fluid no untoward results will follow, which certainly cannot be said of the infusion into the radial artery or vein.—*American Journal of Obstetrics*.

Clinical Notes.

PARALYSIS OF BOTH ARMS, FOLLOWING ABDOMINAL SECTION.

BY F. R. ECCLES, M.D., F.R.C.S., ETC.,
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ON April 24th, 1897, I did a hysteromyomectomy for a fibromyoma which filled the pelvis and extended up to the umbilicus.

The patient was anæmic from repeated and prolonged losses of blood, but otherwise she was in a fairly good condition.

There was nothing unusual about the operation, except the difficulty of getting at the uterine artery upon either side, but by splitting the uterus, and shelling the tumor out the left uterine artery was reached with great ease, and the further steps of the operation, after Dr. Kelly's plan, readily accomplished.

On the second day the patient complained of weakness of the arms. Nothing was thought of this at the time, but on the third day there was almost a total disability of both arms, the arm could not be raised, and the fore-arm could not be flexed on the arm.

Upon thorough examination it was discovered that there was paralysis of the deltoid, brachialis anticus, biceps and supinator longus, and there was also very great impaired action of all the muscles of the fore-arm.

There was considerable pain at times requiring anodynes and anodyne ointments.

At the end of four weeks the right arm commenced to recover, and at the end of eight weeks the patient was able to lift a cup of tea to her mouth. The left has been much slower in recovery.

At the end of ten weeks there was only sufficient action of the deltoid to keep the humerus well up in the glenoid cavity.

Before that the atrophy of the deltoid and the general relaxed condition of all the parts about the joint gave one the impression of a dislocation.

The left is, however, gradually improving, and I do not think there is now much doubt about the complete restoration of the function of all the affected muscles.

The paralysis in no way seemed to affect the recovery from the operation. The abdominal wound was not looked at until the seventh day, when the sutures were removed, and the union found to be complete.

I had thought that the paralysis was caused by the Trendelenberg position, but have since heard of two other cases in neither of which the Trendelenberg position was used.

Progress of Medicine.

MEDICINE

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THE PATHOLOGY OF APPENDICITIS.

Dr. Robert Abbe, in the *Medical Record* of July 10, describes a new method of studying the appendix after removal. He distends the organ with 95 per cent. alcohol through the nozzle of a small syringe tied tightly into its cut end by a ligature, which is drawn tight as the syringe is withdrawn. The appendix thus distended is immersed in alcohol for 24 hours and is then sliced centrally from end to end. Even when the outside preserves the cylindrical form the interior will show one of several conditions.

1. A fæcal concretion blocking canal.
2. Interior ulcerations.
3. Cicatricial strictures, often with pin-hole aperture only.
4. Multiple strictures with intermediate pockets containing suppurating and catarrhal products and confined by greatly hypertrophied muscular and mucous coats.
5. Partial obliterating appendicitis.

These five are subject to infinite variations. He assigns three distinct causes which may result in obstruction and lead to ultimate gangrene, perforation, or rupture following distension.

1. A catarrhal inflammation alone may be followed by stricture, as in the urethra. This form may attend or follow la grippe.

2. A flexure, due to an abbreviated point in its mesentery, may lead to an arrest of its faecal contents, which become inspissated and grow into a concretion.

3. An otherwise healthy appendix may be the seat of circular ulceration from no apparent cause other than probably microbic origin.

The concretions are not, as it is so commonly supposed, limestones, but are uniformly composed of the inspissated remnants of the contents of inflamed appendices. A tight stricture prevents the shed epithelial cells from escaping into the bowel and they become a source of irritation and lead to pus-formation. The epithelial scales and pus cells, with perhaps bits of meat fibre and starch cells, all welded together by bacterial débris, form a typical concretion.

The development of a diseased appendix commonly passes through the following stages :

First, a catarrhal inflammation of the lining mucous membrane.

Second, irregular narrowing of the calibre with hypertrophy of muscular and mucous coats.

Third, strictures.

Fourth, imprisoned food, desquamated epithelium, and pus forming concretions.

Fifth, obstruction at the stricture, distension, perforation, abscess.

The cases resulting from simple flexion or internal ulceration are rarer.

DISCOVERY OF THE MICROBE OF YELLOW FEVER.

Sanarelli, of Montevideo, in a public address delivered on June 10 (see *Medical Record*, July 24) claims to have isolated the germ of this disease. He calls it provisionally the "bacillus icteroides," and says it must be looked for in the blood and tissues and not in the intestinal canal, in which indeed he has never encountered it. Its isolation is for stated reasons possible in only about fifty-eight per cent. of cases. These reasons are that in the beginning of the disease it multiplies very little in the human organism, a very small quantity of its toxin being sufficient to provoke in man the worst type of the disease, and that its toxin facilitates in an extraordinary manner every sort of secondary infection. The bacillus is a little rod with rounded extremities. It is best obtained by placing a fragment of the liver of a fresh cadaver in the incubator at 37° C. for twelve hours. Cultures on agar-agar grown in the incubator at 37° C. present an appearance that does not differ from that of many other species of microbes. But if these cultures are allowed to

grow at a temperature of from 20° to 22° C. they appear like drops of milk, opaque, projecting, and with pearly reflections ; in fact quite distinct from those grown at 37° C. This peculiarity is specific, and by this means a bacteriological diagnosis may be made within twenty-four hours. The microbe is a facultative anaerobe and is pathogenic for many of the domestic animals. The virus injected into the vein of a dog produces results which clinically resemble closely the symptoms of human yellow fever, and the lesions found after death are almost identical with those observed in the human cadaver ; there is intense fatty degeneration of the liver, severe fatty degeneration of the kidneys with the lesions of acute perenchymatous nephritis, and the lesions of intense gastro-enteritis. The patient with yellow fever is menaced by three imminent dangers :

1. Specific infection with the virus of the "bacillus icteroides."
2. Secondary septicæmia.
3. Renal insufficiency.

The "black vomit" is due to the action of the gastric acid upon extravasated blood in the stomach, and the vomiting itself is provoked by the emetic action of the toxins of the "bacillus icteroides" circulating in the blood.

The disease may be transmitted experimentally even by the respiratory tract to rabbits and guinea pigs, so it is possible that the contagion may be transmitted to man by means of the air.

The virus possesses those chief pathogenic properties.

1. The steatogenous : the intense fatty degeneration of the liver cells produces an obstacle to the free course of the bile and favours its resorption—hence the jaundice.
2. The congestive and hæmorrhage producing properties—hence the black vomit and other hæmorrhages from mucous membranes, and the vascular congestions which are the cause of the headache, backache, and liverache.
3. The emetic properties.

The toxin obtained by filtering cultures in broth twenty to twenty-five days old was found to reproduce in the dog the same symptoms and lesions as the virus. Five injections of sterilized and filtered cultures were made under the skin and into the veins of man, and produced typical yellow fever. He made a curious and original observation which seems to explain the mysterious longevity and resistance of the "bacillus icteroides" on board ships—especially old, rotten and badly ventilated ones. The microbe is often incapable of multiplying on a layer of common gelatin ; but if a mould is made to grow in its vicinity, scarcely has the mould begun

to grow when little colonies of "*bacillus icteroides*" spring up around it. He suggests that in localities where yellow fever takes hold with great vigor there may possibly be a mould, hitherto unrecognized, which favours the growth of the microbe. Moisture with heat represents the best condition for the formation of moulds and moulds are abundant in old damp and badly ventilated ships.

Another point of interest is the longevity of the bacillus in sea water which might help to explain the tenacious persistence of yellow fever in maritime localities afflicted by the presence of its specific agent. Finally, the hope is expressed, that it will soon be possible to apply to man a specific preventive and curative treatment.

OBSTETRICS

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EMBOLISM OF THE PULMONARY ARTERY IN THE PUERPERIUM.

Paul von Tiesenhausen (*St. Petersburger Medicinische Wochenschrift*, October 5, 1896) has reported three fatal cases of pulmonary embolism in the puerperium occurring in the St. Petersburg Maternity. These were the only instances met with during twenty-five years, out of 50,000 puerperæ. Two of these occurred in 1884 and one in 1895. In all three cases the symptoms appeared when the patient first got out of bed after labor. In one case this was on the fourth day, in another on the sixth, and in the third on the seventh. Death followed in two cases within twenty-five minutes, and in the third in ten minutes. A necropsy was performed in each case and the diagnosis confirmed. Von Tiesenhausen regards whiteness of the lips followed later by a cyanotic color as a very characteristic symptom. Prophylaxis consists in prolonged rest after confinement, and in cases of phlegmasia alba dolens rubbing of the leg should be forbidden. In the most recent case, hypodermic injections of ether and other means of treatment were tried without success.—*Univ. Med. Magazine*.

TREATMENT OF ECLAMPSIA.

Veit. It is impossible to recommend a uniform plan of treatment; there is, however, no doubt in the author's mind but that a large number of cases would and do recover without any and with every treatment. The claim that the prognosis is bettered through rapid delivery by accouchment forcé or Cæsarean section is as yet not sub-

stantiated, as are also the reported favorable results from venesection. The best method so far seems to be the administration of large doses of morphine. A rational therapy of eclampsia is not possible until the pathology of the disease is absolutely clear; it is not improbable that different cases have a different etiological basis. The hastening of labor by harmless means, rupture of the membranes, delivery after full dilatation, large doses of morphine for the suppression of the attacks, the non-administration of food, per os, to unconscious patients, and the induction of diaphoresis by external means, seem to offer the best chances to the patients. There is practically no reason why an attack of eclampsia in itself should be considered so grave as to justify radical operations, which may be safe in the hands of single operators, but which subject the patient to great risks if performed by the profession at large. In exceptional cases, however, exceptional operations are justifiable.—*Amer. Jour. of Obstetrics.*

ORGANIC HEART DISEASE DURING PREGNANCY AND LABOR.

W. W. Lea, of Manchester (*Med. Chron.*, Oct., 1896), calls attention to the danger of organic heart-disease during pregnancy and labor, and reports seven such cases coming under his personal observation. Three of these patients died. It is known that there is a certain amount of dilatation in normal hearts during pregnancy as a result of the increased amount of blood and the greater blood-pressure. Valvular disease causes at times excessive dilatation and even fatty degeneration in the heart-muscle itself. In the periods between pregnancies the symptoms at times entirely disappear.

In the cases where heart-lesions exist there is always a marked tendency to abortion or premature labor. In cases of mitral stenosis the period of greatest danger for the patient is immediately after the birth and during the first few days of the puerperium; death from such conditions has, however, occurred as late as six months after confinement. When compensatory disturbances occur as early as the third month induced abortion appears to be indicated; the symptoms, as a matter of fact, rarely appear before the fifth month. Digitalis and strophanthus should be given in these cases, the dangers of induced premature labor being greater than expectant treatment. The duration of labor should be shortened as much as possible. In cases of marked cardiac weakness immediately after labor, nitrate of amyl is to be given; but in some instances treatment is of little avail. During the puerperium absolute quiet should be enjoined, and digitalis given as required.—*Amer. Med.-Surg. Bulletin.*

THE ACTION OF SULPHATE OF QUININE AS AN OXYTOXIC.

Sulphate of quinine (Schwab, *L'Obstétrique*, February, 1897,) is considered by many authorities to have a distinct effect in increasing the contraction of the uterus during labor. Schwab states that in every case in which he has given it for uterine inertia contractions have rapidly come on. He records two cases in detail. In his opinion the drug is a powerful stimulant to the uterine muscle. It is only efficacious, however, during labor, and whilst contractions of the uterus are going on. It will not bring on labor or abortion. The contractions set up by quinine are intermittent, thus preserving their physiological character, and hence there is no additional risk to the mother or child attending its administration. The amount should be not less than 15 grains, given in two doses, at ten minutes interval. The effect on the pains is produced in 20-30 minutes. It may be prescribed with benefit during the weak pains of the first stage of labor, and more especially in cases of premature rupture of the membranes. M. Schwab has also given quinine in cases of retention of the placenta after labor or abortion. In three cases quoted the placenta was expelled a short time after the administration of quinine. —*Medical Chronicle*.

IMPORTANCE OF ABDOMINAL PALPATION COMPARED TO
VAGINAL EXAMINATION.

Ahlfeld does not agree with the recommendations of Leopold to employ abdominal palpation exclusively as a means of diagnosis during the progress of labor. Abdominal palpation alone is not sufficient to recognize existing or impending dangers; intrapartum its execution is difficult, and if thoroughly performed, not free from danger. The obstetrician who manages a labor case without performing vaginal examination is largely trusting to chance. With proper asepsis vaginal examinations are free from danger. Both Ahlfeld and Leopold occupy extreme positions. Abdominal palpation and vaginal examinations are of great and unquestionable value, and used conjointly they enable us to make a correct diagnosis. Leopold in his first essays drew attention to the absolute neglect of abdominal palpation and pointed out its value as a means of diagnosis; he also showed that puerperal infection often follows vaginal examinations and that a decrease in the number of examinations decreases the dangers of infection. Whenever the physician is not positive that everything proceeds normally a thorough vaginal examination is certainly indicated. It would be bad obstetrics to wait

until actual complications have appeared, but the frequent and aimless vaginal examinations cannot be too severely condemned. Concerning the danger of abdominal palpation, we cannot recall a single case where an accident has followed its employment, nor can we imagine that such could occur except its execution had been most brutal.—*American Journal*.

THE MANAGEMENT OF POST-ABORTUM PLACENTAL RETENTION.

Chaleix-Vivie points out (*Gaz. Hebdomadaire de Méd. et de Chir.*, December 27th, 1896) that the chief dangers of incomplete abortion are hæmorrhage, sepsis with a crowd of resulting morbid states, and the formation of deciduoma malignum. He shows how vaginal and uterine injections, the introduction into the uterus of caustic solutions or of sticks of chloride of zinc, the administration of ergot, and the plugging of the vagina, are all inadequate or dangerous means of arresting the hæmorrhage from placental retention. He advises digital or instrumental curettage; but, with regard to the latter, he insists that the performer shall be an expert in uterine surgery; failing this qualification, the physician ought simply to plug the uterus with iodoform gauze until operative interference can be safely undertaken. For the septic dangers, also, and even for the risk of the growth of a deciduoma malignum, Chaleix-Vivie regards curetting as the treatment of election.—*British Medical Journal*.

DISTURBANCE OF LACTATION.

Angel Money (*Australasian Medical Gazette*, January 20th) maintains that the custom of weaning newly-born children is too prevalent, and too few attempts are made to correct the milk when at fault. A thorough investigation of mother and milk should be made, and the quantity and quality of the latter determined and the percentage of fat and proteid, which are the only variable factors, ascertained. Bad milk contains toxic matters, albumoses, and leucomaines, albumen being plentiful but of the wrong kind, while the percentage of fat is defective; colostrum corpuscles are present and may be numerous. The most successful milk is that of mothers desirous and confident of ability to nurse. Exercise can diminish percentage of proteids, and a moderate amount of beef or mutton can increase percentage of fats; these facts are seldom acted upon. A poor milk may be enriched by improving the maternal dietary, giving more meat and more milk, diminishing exercise, shortening intervals of nursing, and diminishing amount of liquids imbibed. Rich milk may be diluted

by lengthening the intervals of nursing, decreasing the amount of meat eaten, increasing exercise, augmenting fluid drunk ; drinking rain or distilled water, Helidon, or Vichy water midway between the nurslings is an excellent practice. Colostrum corpuscles present after the first fortnight signify defective formation of milk. It is unjustifiable to diminish the water in poor milk by purgation, which may stop milk flow or may even cause the milk to contain toxic substances. The breast pump is not sufficiently used to improve the function of lactation ; it should replace the baby while attempts are being made to improve the milk. The more perfectly formed the milk is, the more caseinogen and less albumen it contains ; however great the percentage of caseinogen, it never in the stomach forms dense clots as formed by cow's milk. It is a mistake to suppose that stout or porter improves milk. Another error is the belief that beef-tea and chicken broth are good for nursing mothers. Excitement, fatigue, and overfeeding should be avoided ; also highly-spiced, rich, or stimulating foods. The bowels should be regulated by proper dieting and massage or exercise rather than by laxatives, and it is highly desirable that there should be at night uninterrupted sleep for six hours for mother and child.—*British Medical Journal*.

ANTIPYRIN IN LABOR.

Savitzky (*Vratch*, No. 22, 1896) as the result of seventeen years' experience, recommends antipyrin enemata as an obstetrical anæsthetic. He administers 1 gramme every two to six hours, occasionally combining the drug with opium (from 15 to 25 drops of Russian tinctura opii simplex, which contains 1 part of opium to every 10 parts). The pains are always relieved in fifteen or twenty minutes after the first dose. Frequently the patient soon falls asleep, which is especially beneficial in cases of spasmodic uterine pains and tetanic contraction of the os ; hæmorrhage also diminishes. No untoward accessory effects were even observed by the author.—*British Medical Journal*.

SURGERY

IN CHARGE OF

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SENILE TUBERCŪLOSIS AND SUBCUTANEOUS (TUBERCULOUS) ULCERATION.

Howard Marsh, F.R.C.S. (Eng.), contributes an article on this important subject to the *Lancet*, of May, 1897.

Although Sir James Paget's original essay on senile scrofula was published in 1867, in some of the principal manuals of the present day, the subject is not even mentioned, while in others it is referred to in so cursory a manner as to convey the impression that it is of little importance in the practice of surgery. Marsh's experience leads him to believe that the opposite of this is, in reality, the case. The disease in its various manifestations is frequent rather than rare ; its early recognition is often difficult ; indeed, it is apt to be overlooked by those who regard it as a mere pathological curiosity. Prognosis is generally very unfavorable, and the treatment raises questions of considerable gravity from the patient's point of view. Among the cases met with have been the following :

CASE 1. Large double iliac abscess, probably dependent on Pott's disease. The patient, a man aged seventy years, was admitted into St. Bartholomew's Hospital about six weeks ago with two iliac abscesses of very large size : that on the left side was already pointing, and proved, when it was opened, to contain about two pints of pus. The cavity was scraped and drained. This abscess is now very nearly healed. The second abscess will be opened in a few days.

CASE 2. A woman, aged seventy-four years, admitted for an abscess of the right side. Here, as in the former case, there was no angular curvature or other conclusive evidence as to the precise

origin of the abscess ; but it must be remembered that angular curvature may be absent, notwithstanding the presence of advanced Pott's disease in patients of middle or advanced life. In such patients the vertebrae are so massive and formed of such strong bone, that although excavation occurs their framework often resists deformity ; while in other cases the disease takes the form of a spreading periostitis, and excavation is either absent or present to only a slight extent. It seemed probable that this patient and the patient in Case 1, were suffering from Pott's disease.

CASE 3. Last year a woman, aged sixty-nine years, was admitted to the hospital suffering from spinal disease. On examination she was found to have a very marked angular curvature at the level of the eighth dorsal vertebra. The spinous process of this vertebra was sharply prominent and the column above this point for eight or nine inches was perfectly straight. The patient said that for the previous twelve months she had suffered from pain in her back and round the sides of her trunk, and that the deformity of the spine had been progressing for nine months. She could now move and walk only with difficulty, and was obliged to lie down during the greater part of the day. This patient, who came from a distance, was supplied with a poroplastic jacket and discharged, and heard no more of. That the angular deformity in this case was due to tuberculosis seemed clear. The alternative view that it depended upon new growth—sarcoma or carcinoma—appeared to be negatived by the absence of severe pain and of paralysis, and also by the period over which the case had extended : for malignant disease of the spine is generally fatal in nine months, and this patient, although her spinal disease had existed for more than nine months, was still in very fair general health and condition.

CASE 4. A woman, aged seventy-two years, developed what was evidently tuberculous disease of her left ankle. The joint became the seat of a slowly increasing fusiform swelling involving it in all its aspects. In the course of three months suppuration occurred, and in spite of free incision, scraping and drainage, pus burrowed widely amongst the tendon sheaths of the deep muscles. Amputation was performed at the junction of the middle with the lowermost third of the leg. The stump healed favorably, but slowly. A year afterwards the lower third of the left ulna became the seat of extensive tuberculous periostitis, attended with dusky redness and œdema of the skin and considerable pain. Free incisions were made and the granulation tissue scraped away. The wound slowly healed and the patient remained

well for three years. At the end of this time, her right ankle became affected with what was obviously a tuberculous synovitis. Within two months the joint had become disorganized and the ligaments had been so far destroyed as to allow of free lateral movement. Suppuration occurred and as the tissues in the lower third of the leg were becoming oedematous, amputation was performed six inches above the joint. The patient, who was now seventy-six years of age, bore the operation well, and the wound soon healed. On dissection the joint was found to have undergone extensive tuberculous disease. The synovial membrane was converted into a thick layer of pulpy granulation tissue. The articular cartilage was almost destroyed, the bones in places somewhat deeply eroded, and the principal ligaments had in great part disappeared. Microscopic examination showed that the disease was beyond question tuberculous in character.

CASE 5. A patient, aged seventy-two years, who had been suffering for fifteen months from tuberculous disease of the outer and front portion of the left foot. On examination the metatarso-phalangeal joint of the little toe was found to be disorganized and occupied by granulation tissue, and a sinus led into the substance of the external cuneiform bone, which was in a state of rarefying osteitis.

CASE 6. Two years ago a man, aged fifty-six years, was under treatment for what at first appeared to be osteo-arthritis of his right knee. The joint had recently become a little swollen, stiff, and painful. There was some grating on movement, and the muscles of the thigh were markedly wasted. The knee, however, became more and more swollen, the synovial membrane was thickened and pulpy, and the skin over the joint was dusky and abnormally warm. Within three weeks of the patient's admission, and about two months after the commencement of the disease, the joint suppurated, and, in spite of complete rest, went from bad to worse, and was amputated three weeks later. On examination it was found extensively disorganized by tuberculous disease. The synovial membrane was converted into a thick layer of granulation tissue, the articular cartilages were eroded and reduced to thin, wafer-like plates, detached from the bones. The bones themselves were in some parts deeply ulcerated. The patient quickly recovered from the amputation.

I shall merely mention a few other examples of senile tuberculosis. A patient, aged sixty-five years, with tuberculous epididymitis; a man aged sixty-eight years, with enlarged and suppurating cervical glands; a man aged seventy-five years, with rapid disor-

ganization of the wrist joint, requiring amputation ; a woman aged sixty-seven years, with tuberculous caries of the metacarpal bone of the thumb ; a woman aged sixty-two years, with tuberculous disease of the axillary glands, imitating carcinoma ; and tuberculous disease of the kidney in a woman aged fifty-eight years.

The symptoms in senile tuberculosis are the same as those met with in the more severe examples of the corresponding forms in the young. The main difference between tuberculosis in the old and in the young is that while in the young, if adequate treatment is adopted early and properly carried out, recovery is the rule, in the old, in spite of the best known treatment, the progress of the affection is, in the majority of cases, from bad to worse. The unfavorable progress in the cases is so constant that I do not myself remember to have seen repair take place in a tuberculous joint in any person over fifty years of age. The best treatment, although it will often be found of little avail, is from the first to place the joint at absolute rest ; to secure the best conditions for preserving the patient's general health ; to open abscesses as they form, with the most rigid precautions against septic changes in the wound ; and to resort to amputation when it is found that the progress of the case is in a persistently downward direction. Amputation, if means are taken to prevent hæmorrhage, and if an aseptic condition is maintained, will be perfectly well borne in the case of all the smaller joints and often of the knee. The foregoing cases would tend to confirm Sir James Paget's statement that there are no structures which in the young appear to be "seats of election" of scrofula (or, as would now be said, of tuberculosis) in which the affection is not met with in people over sixty years of age.

He now gives examples of "subcutaneous tuberculous ulceration."

CASE 7. Boy, aged nine years, with a sinus on the inner side of his popliteal space and some ill-defined thickening over the internal condyle of the femur. These appearances suggested that the case was one of tuberculous disease of the lower end of the femur, attended with suppuration. On passing a probe, however, through the sinus, no bare bone could be detected, and, indeed, it was apparent that the probe nowhere passed through the deep fascia, but that it ran easily in various directions close beneath the skin, which, over the most prominent part of the internal condyle, was scarcely thicker than writing paper. The nature of the case as one of wide undermining of the skin by "subcutaneous ulceration" was clear. The whole of the undermined area was therefore exposed by

free incision of the skin ; the flaps thus formed were raised and turned back ; the granulation tissue was thoroughly scraped away by a Volkmann's spoon ; the wound was dusted with iodoform, and the flaps were replaced and fixed by sutures. Sound healing by primary union occurred except in the immediate neighborhood of the original sinus. Here a second scraping was necessary, soon followed by sound healing.

CASE 8. Boy aged 10 years, with three sinuses, three or four inches apart, over the tibia. The orifices of these sinuses were filled with protruding granulation tissue, and their general appearance, together with some swelling of the soft parts, seemed to indicate plainly enough that the case was one of necrosis of the tibia. On proceeding to operate, however, I found that the deep fascia was everywhere intact ; but the subcutaneous tissue for some distance around was converted into granulation tissue, so that the skin was completely undermined. In places it was very thin. Free incisions were made, the granulation tissue scraped away, and the flaps were replaced and sutured. The wound healed in about three weeks.

* The explanation of this particular form of tuberculous disease appears to be the following. When the tuberculous process is established in the subcutaneous tissue it extends in a horizontal direction, because the subcutaneous tissue is loose, vascular, and easily invaded, whereas both the skin and the deep fascia, especially the latter, owing to their comparative firmness and toughness, tend to withstand infection. The same fact is illustrated by the ordinary undermining of the skin in superficial tuberculous ulceration. It is illustrated also by the fact that in rodent ulcer the process extends in the subcutaneous tissue further than it does in the skin itself, so that for the complete removal of this disease it is necessary to cut well beyond the limits to which the skin appears to the naked eye to be involved. In fact, in subcutaneous ulceration, as in other instances, the undermining of the skin is due to the fact that the process of infection spreads most readily in the direction of least resistance.

THE SURGICAL TREATMENT OF RELAPSING APPENDICITIS.

In a lecture on this subject reported in the *Lancet*, May, 1897, George Heaten, F.R.C.S., Eng., says, that he thinks that relapses are more frequent than is generally deemed to be the case. Hawkins, from an analysis of 250 cases admitted into the wards of St. Thomas' Hospital found that in 23.6 per cent. there was a history

of one or more previous attacks. In almost all these relapsing cases it is the appendix itself which is the starting point of the recurrent attacks of inflammation. In one or two exceptional cases only have they been traced to ulceration in the cæcum itself. The principal morbid conditions which are found may be grouped under six heads: (1) An enterolith is imprisoned in the appendix with occasional distension of its blind end with pus (2) The appendix is surrounded by dense, inflammatory adhesions enclosing an encapsuled abscess. (3) The lumen of the appendix is destroyed by ulceration and its distal end is distended with mucus or pus. (4) The appendix is free but much thickened, resembling a mass of cartilage rather than a mucous tube (such an appendix is occasionally lengthened and unequally distended along its length). (5) The appendix is coiled upon itself or acutely, "kinked" and fixed in this position by adhesions. And (6) the appendix is surrounded by dense old adhesions, matting it to the cæcum, small intestine, bladder, rectum, or the abdominal wall. In some cases these relapses seem to become milder, in others more severe as time goes on; but a severe or even fatal relapse may follow a succession of very mild ones, and we cannot predict with any certainty the character of future relapses from that of the previous ones. For this reason the principle of treatment by removal of the offending organ during a quiescent period, advocated and carried out by Mr. Treves, cannot be too strongly insisted upon. But Mr. Heaten says he would go still further and make it a rule to strongly advise operation in all cases where there has been a single relapse after the primary attack. Careful dieting and medicine with prolonged rest in bed may in a few of such relapsing cases effect a lasting cure, but this is the exception, and in the majority of cases relapse follows relapse, producing in some cases a chronic state of invalidism, while each relapse adds to the difficulties and dangers of any operation which may ultimately have to be performed. He knows of five cases during the last few years in which a sudden fatal general peritonitis has followed the repeated warnings given by a succession of mild relapses, in which had this treatment been adopted after one of the earlier mild attacks, these lives would in all probability have been saved. The operation is as a rule simple, but it may be one of extreme difficulty owing to dense adhesions. The mortality, however, attending it in skilled hands is extremely small (Mr. Treves has published a brilliant record of 150 cases with only one death). The repeated attacks of inflammation have fortunately rendered the peritoneum both less vulnerable to injury and

less absorbent of poison ; and for this reason an amount of tearing and bruising which, with a normal peritoneum would almost certainly set up the most intense inflammation is frequently followed by little or no disturbance. Whenever possible the stump of the appendix should be provided with a serous covering. To effect this a circular flap of peritoneum should be turned back, the muscular and mucous coats ligatured with silk, cut through, and the stump touched with pure carbolic acid. The flap of serous membrane may then be stitched over the stump so as to completely cover it in. No drainage of the peritoneum is necessary in uncomplicated cases. It should be avoided if possible as the liability to a subsequent yielding of the scar and formation of a neutral hernia is thus considerably lessened. The rapid gain in weight and the quick restoration to robust health after the operation is one of its most remarkable features.

Mr. Southam, in the *Lancet* of June 5th, describes the pathological conditions found in twenty cases of recurrent appendicitis treated by operation. The youngest was ten and the oldest forty-four years of age. In 15 of the cases the patients were between fifteen and thirty years of age. In all of the specimens examined the appendix showed evidences of chronic inflammatory changes, its coats—mucous, muscular, and peritoneal—being all thickened. In some cases its lumen was uniformly narrowed and almost obliterated ; in others it was partially or completely occluded at same point and dilated on the distal side of the obstruction, occasionally forming, when the occlusion was complete, a cystic cavity of same dimensions. In many instances it was much shortened, measuring only from 1 inch to 1½ inches, instead of from 3 inches to 4 inches, its normal length. It was frequently found to be bent in itself and bound down by adhesions, in one case the tip almost touching the cæcal end of the process. The contents of the appendix consisted either of clear mucus or of a muco-purulent fluid ; in two cases a hard faecal concretion was present in its interior, and in another a concretion, which had ulcerated through its wall, was found in an abscess cavity external to it. In most cases the inflammatory changes, where not confined to the appendix itself, for evidences of appendicular peritonitis were generally found to be present, the peritonitis being usually of the adhesive character, the inflammatory exudation which had been pared out round the appendix having undergone organization and forming adhesions. These were often very firm and extensive, surrounding the appendix and fixing it to the parietal peritoneum, omentum, cæcum, or small intestine. In some cases they were present after a second attack, in other instances they were absent after many attacks. In one case, the third attack was

accompanied by all the symptoms of acute obstruction. On opening the abdomen the appendix and cæcum were found surrounded by an extensive mass of dense adhesions, included in which were several coils of small intestine, so firmly and so intricately matted together that it was quite impossible to liberate them. In some instances the peritonitis was of the suppurative character, pus having formed in the neighborhood of the appendix. This complication was met with in eight of the twenty cases. In six of these the suppuration was localized, an encysted intra-peritoneal abscess being present; in two cases the suppuration was general, there being well marked evidences of diffuse purulent peritonitis. Suppuration is often secondary to ulceration and perforation of the walls of the appendix, but it has been shown that without any perforation of the appendix, suppuration round it may be due to micro-organisms invading its walls and passing through them into the peritoneal cavity. In health, bacteria are almost constantly present in the interior of the appendix, as well as in other parts of the intestine, without causing any harm. If, however, the vitality of the walls of the appendix—as of any portion of the intestine—becomes impaired from any cause, as in the case of one which has become the seat of recurring attacks of inflammation, its resisting power is diminished. Under these circumstances the bacteria may invade and penetrate its coats, exciting peritonitis, which is often of the suppurative variety. As regards the cause of these cases, if left to themselves, the attacks of appendicitis may recur at intervals for years, and ultimately a cure may take place by a gradual process of obliteration of the lumen of the process and its conversion into a fibrous cord. Suppuration may, however, at any time occur; if an encysted abscess forms, after the evacuation of its contents, the appendix usually shrivels up, becoming obliterated and causing no further trouble. On the other hand, if the suppuration is diffuse, *i.e.*, if there is general purulent peritonitis—the result will probably be fatal. Of the various theories advanced to account for appendicitis, the most probable is that which regards the appendix as a diverticulum, which readily allows of the accumulation and stagnation of fecal matter. This mingling with the secretion from its mucous lining and undergoing fermentative and putrefactive change sets up a catarrhal inflammation, which may be followed by ulceration and perforation or by thickening of its walls, the latter condition being the one most commonly met with in the recurrent form of the disease. The fecal concretions found in its interior are probably the consequence, not the cause, of the inflammation, being due to inspissation of its contents; but once formed there, they no doubt tend to excite and keep up the recurrent attacks. Though foreign bodies rarely lodge in the appendix, in one of the above cases, after numerous attacks of appendicitis, an abscess formed and at its bottom was found a pin.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF

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ASEPSIS OF THE NASAL CAVITIES.

After an elaborate review of St. Clair Thomson's, Wurtz's, and Lermoyez's papers, Piaget relates the numerous experiments which he has conducted for the study of bacteria of the nose. In the normal state the nasal cavities are free from microbes, except the anterior part and vestibule. The culture of nasal mucus collected in the remote parts is sterile; the nasal cavities are normally aseptic. That asepsis is the result of the structure of the canal, of the ciliated epithelium, and especially of the bactericidal properties of the nasal mucus. That bactericidal action is absolute for carbuncle bacteria, very marked for Loeffler's bacillus, and less marked for staphylococcus. This asepsis explains to a certain degree the immunity of nasal operations.

Klemperer, of Strasburg, does not agree with the authors named, but maintains that in healthy noses, while it is true that bacteria are to be found in quantity only in the vestibule, still no part of the nose is germ-free. Let the anterior parts of the nose be thoroughly sterilized with perchloride of mercury and washed out with sterilized water; then wipe out the parts higher and deeper in with sterilized cotton-wool swabs. These (the swabs) always bring away a few germs, from which two, three, four, or more frequently six, eight, ten colonies can be cultivated.

Klemperer cannot confirm the statements of Wurtz and Lermoyez as to the bactericidal properties of nasal mucus. Unlike these authors, he experimented not with anthrax bacillus, but with the bacteria which he had previously cultivated from the nose whose mucus he was testing. At first they did not grow well, and even diminished to some extent in number, but soon grew accustomed to the mucus and multiplied in it. Extinction was never observed.—*Journal of Laryngology, November, 1896. University Medical Journal, November, 1896.*

PROGRESS OF LARYNGOLOGY AND RHINOLOGY DURING THE VICTORIAN ERA.

St. Clair Thompson (*Brit. Med. Jour.*) gives a brief but terse outline of the advancement made during the sixty years of the Queen's reign. In 1837 laryngology was practically non-existent; as no suitable instrument had been invented for examination of the larynx. In 1840 Liston tried to examine the larynx with a dentist's mirror, but he had no laryngoscope. In 1844 Warden attempted to do the same thing by the use of prisms, but he was equally unsuccessful.

It was left to Signor Manuel Garcia, a Spanish singing master, to invent the laryngoscope. He is still living in London, a hearty nonagenarian. His discovery was made in 1854, but at the time was received with apathy by the medical profession. His investigations were all made upon himself with the aid of two mirrors. Czermak, however, saw Garcia's paper and his mirrors, and finally perfected the art of laryngoscopy, and presented it to the world in the *Medizinische Wochenschrift* in March, 1858. Czermak was also the first to demonstrate the use of mirrors in posterior rhinoscopy, which he did in 1863.

The progress of laryngology, to use St. Clair Thompson's words, "has probably been more rapid than that of any department of medicine during a similar period of time. Diseases of the throat and nose are no longer dependent on symptoms only, for diagnosis. The mirror reveals the mischief, and the hand guided by it, applies the treatment required." The first laryngeal growth removed *per vias naturales* in England was by Dr. Walker, reported in the *London Lancet* in 1861.

Perhaps the most noteworthy event in this department of medical science since the invention of the laryngoscope was the discovery of the anæsthetic properties of cocaine, by Koller, in 1884. In sparing the patient from pain during operation, and from discomfort during examination, this drug has been invaluable. In rhinology the benefits derived from it are even greater than in laryngology, as its power of constriction of mucus tissue greatly facilitates examination.

Laryngology in relation to medicine has made immense strides during recent years, as a single sign observed in throat or nasopharynx may throw important light upon obscure internal diseases. A syphilitic process in the post-nasal space, a tuberculous ulcer in the larynx, a paralysis of a vocal cord, when observed positively by

the eye, may clear away obscurity, otherwise difficult to remove. The discovery of suppuration in one of the accessory cavities of the nose, may account for headache, while the presence of adenoids may give the reason for deafness and ear disease.

Recent developments in this branch of science are too new to speak positively of the results. The autoscope may yet have a history worth recording. Intubation even now holds a secure position, and the Roentgen Rays have proved their efficacy by enabling the surgeon to detect and remove foreign bodies from the œsophagus.

ESTHEOMENIC MENSTRUAL ULCER OF NOSE.

McNaughton-Jones (*Jour. of Laryngology*) reports a case of this exceptional disease. In Nov., '95, a patient consulted him relative to an ulcer on the inner column of the nostril. It was flat and covered with brown scab; edges slightly raised; red blush around it. The nose had been affected for several months, exacerbation always occurring at the catamenial period and marked by extension of the disease. At the cessation of the menses there would be improvement extending during the interval.

Many methods of treatment were tried, but ineffectually. Watson Cheyne and MacIntyre both saw the case in consultation. Microscopical sections were examined, excluding tuberculous and malignant disease. Finally, after many months of trial, the disease was subdued by the application of salactol and chinosal. Of salactal he used light applications for a few seconds to soften the crust. Then he saturated and inserted a cotton-wool plug of one in six hundred of chinosal. The treatment was repeated at regular intervals. From May to October he hastened the healing of the granulations by touching them occasionally with galvano-cautery. Internally thyroid extract was given. A year from the date of commencement of treatment the patient was quite well.

ADENOID DISEASE.

Greville Macdonald (*Jour. Laryn.*), the president of the laryngological section of the British Medical Association, summarizes his views as follows:

I. "When there is middle ear disease of any sort, with or without symptoms, usually attributed to ankylosis, and whatever the age of the patient, every trace of adenoids should be removed, although necessarily, in many of such cases, one's prognosis must be extremely guarded."

2. "Whenever there is a constant tendency to cold taking, or there is chronic laryngitis or bronchitis, and the patient is under 30, we should not hesitate to operate, and that with a most favorable prognosis, should the obstruction be profound."

3. "Whenever—to come to the nervous symptoms—we have paroxysmal sneezing or hay fever, spasmodic asthma or laryngismus stridulus, headaches, chorea, or epilepsy, we need not scruple to operate, although here again our prognosis must be guarded."

4. "Finally, whenever there is distinct flattening of the lower part of the thorax on one or both sides, or depression of the costal cartilages, or prominence of the sternum, we should probably be right in operating, although there may not be much indication of general malnutrition."

Havilland Hall, in one of the Lettsomian lectures, delivered before the Medical Society of London, Feb. 1897 (*Jour. Laryn.*), lays emphasis upon the amount of chest deformity which is produced by defective nasal respiration. This, in early life, is almost always occasioned by the pressure of adenoid vegetations. Hence the importance of their early removal.

Gleitsman at the Lar. Sec., New York Academy of Medicine (*Laryngoscope*, June), dwelt upon the influence of adenoid growths, upon the development and configuration of the nasal septum, and upper maxilla. Many facial deformities, he stated, were produced by the interference of adenoids with nasal respiration. Among these were deflected septum, high arched palate, and V shaped upper maxilla, with the lateral teeth turned inwardly and the molars outwardly. The result is that the upper jaw, being flattened, projects pointedly forward.

Kahn (*Rev. Hebd. de Lar.*, Apr., 1897) gives four instances, in which a bony crest on the posterior wall of the pharynx interfered with the manipulations of Gottstein's curette. In two of these the instrument became temporarily fixed in the bone. In one case troublesome hæmorrhage followed.

AUTOSCOPY OF THE NASO-PHARYNX.

Katzenstein (*Archiv. fur Laryng. und Rhinol.*) describes the method of examination. By it the posterior wall and roof of the naso-pharynx, the mouths of the eustachian tubes, and the fossæ of Rosenmueller can be examined. By its aid, also, adenoids can be removed.

PÆDIATRICS

IN CHARGE OF

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FOUR CASES OF GLANDULAR FEVER IN THE SAME FAMILY. ONE WAS AN ADULT.

Dr. A. E. Roussel, Philadelphia (*Medical and Surgical Reporter*, April 17th, 1897), reports four cases of Glandular fever. Jan. 20, '97—Sarah B., aged 5 years, was taken suddenly ill with vomiting. Temperature, 101; pulse 120, and headache. Movement of head was restricted, and there was slight but distinct glandular enlargement extending downward and forward from the angle of the jaw and behind the sterno-cleido mastoid on the right side. Throat exhibited a general diffuse redness, more marked on the right side, but no actual swelling. Scarletina was suspected, and the child isolated. Next day constipation was present, and the glands were larger, but no rash. On the third, excessive perspiration was added to the other symptoms. This group of symptoms lasted for eight days, when the temperature dropped to normal, and a tedious convalescence was entered on, the child being pale, debilitated, with a tendency to excessive perspiration.

On the third day of the sickness of this child, a younger child was taken sick in a similar way. His illness progressed similarly, lasting twelve days, and then convalesced.

On the sixth day the oldest boy, seven years old, was similarly attacked, although the first case had been promptly isolated.

On the ninth day the nurse, 24 years old, was attacked.

All four cases followed the same course, and all had a lingering convalescence.

WHAT IS THE CAUSE OF THE EXCESSIVE MORTALITY AFTER SUPRA-PUBIC CYSTOTOMY?

Dr. Orville Horntz, Philadelphia (*Medical and Surgical Reporter*) explains that in Morrow's "System of Genito-Urinary Diseases" statistics are given of 744 cases of supra-pubic lithotomy. Of these 591 were in children under 14 years old, with 74 deaths, or 12.52 per cent. mortality.

Between 14 and 50 years the mortality was 12 per cent. Over 50 years, 33 per cent. The writer claims that he has performed supra-pubic cystotomy 70 times with one death. He gives the following probable causes of the excessive mortality:

- 1st—Want of proper preparation of the patient.
- 2nd—Over-distention of the bladder from a lack of knowledge of its capacity in its diseased condition.
- 3rd—Non-employment of the rectal bag.
- 4th—Over-distention of the rectal bag.
- 5th—Extensive and unnecessary dissection of the prevesical tissue.
- 6th—Lack of proper adjustment of a drainage tube of large calibre.
- 7th—Injury of the peritoneum by the knife.
- 8th—Loss of time at the operation from want of anatomical knowledge.

RETAINED INTUBATION TUBES—CAUSES AND TREATMENT.

Dr. J. O'Dyer, New York. (*Archives of Pediatrics*, July, 1897), explains that by retained intubation tubes we mean the necessity of continuing intubation long after the disappearance of the original diseases. The cause and seat of the obstruction is best explained by the three following rules:

- 1st—Traumatism, producing stenosis.
- 2nd—Injury by a non-fitting tube. (A well-made tube of too large a size; the right size for the age, but too large for the case; a well-made tube, not cleaned at proper intervals, or an imperfectly made tube.)
- 3rd—The seat of the lesion is just below the vocal cords, in the subglottic division of the larynx.

Why does a well-made tube of the proper size injure the larynx, and why is this lesion below the vocal cords?

Principally because when the membrane is sub-glottic the tube suitable for the age is too large for the passage. This portion of the

passage is surrounded by the rigid band of the cricoid cartilage, and as the membrane increases in thickness the tube is either expelled, or injury to the parts is done by pressure. In the early stages stenosis from this cause returns slowly when the tube is removed ; but the interval gradually grows shorter until finally the skill of the operator is taxed to return the tube quick enough to prevent dyspnoea. Rapid asphyxia may also result from granulation tissue higher up in the larynx, from destruction of the cricoid cartilage, or from paralysis of the cords.

Destruction of the cricoid allows the soft parts between the thyroid and the first ring of the trachea to collapse and thus cause asphyxia.

The treatment of these cases is evident, viz., to reduce the size of the tube, etc., tracheotomy, in the author's opinion, should never be done, although it is done in Europe. (The author gives his reasons.) The chief cause of retained tubes is granulation tissue, caused by ulceration, produced by the lateral projection of the shoulder of a tube, either badly made, too large, and carrying calcareous deposits. The remedy for this is a tube with a built up head. For stenosis, due to destruction of the cricoid, tracheotomy is the only remedy.

Particulars of a case are given in which stenosis was produced by a mass of oedematous tissues, possibly mixed with granulations just below the chink. This was treated by coating the tube with hot gelatine, sprinkled with alum. The gelatine began to swell when the tube was introduced, and caused gradual absorption of the oedema.

MULTIPLE CUTANEOUS GANGRENE OF THE SCALP IN A CACHECTIC CHILD.

T.H., æt. 2 years, was seen by me (A. Douglas Heath, M.D., London, *British Medical Journal*, July 3, 1897) Jan. 11, 1897. He was much emaciated after an attack of pertussis. A few dry rales were heard in his chest. Tongue dry and brown, and teeth covered with sudes. Temperature, 101.4. On the upper occipital region of the scalp was found a deep pinched out ulcer, as large as a five shilling piece, with edges sloping suddenly to a moist black slough on the floor. The ulcer was rather more than quarter of an inch in depth. Bare bone could not be felt, and the appearance resembled that of cancrum oris. The odor was sickening. About two inches away was a patch of skin the size of a shilling, black in the centre and purple at the edges. Another spot was also found,

over which the skin was of a pale pink color, with a slight silvery desquamation of the epidermis. This small spot had been the last to appear. The oldest and largest gangrenous spot had started as a large pimple three weeks previously, and soon after became exactly like the small pink swelling I had noticed. Before Jan. 18 five new lesions appeared, and at this date the temperature was 102°. The child died on the following day from septic intoxication. No post mortem was obtained.

GANGRENE OF THE PENIS AFTER RITUAL CIRCUMCISION.

Oct. 10, a child nine days old was circumcised by the "mohel."

Oct. 11, hæmorrhage began, and was stopped by the "mohel" after four hours' work.

Oct. 12, Dr. Brothers sent for, and found the child feverish, whining, vomiting, and distinctly collapsed, with a distended bladder. The glans penis was in a condition of dry gangrene, and presented a black, hard, cylindrical mass three-quarters of an inch long. The penis was constricted by a narrow strip of gauze saturated with some styptic. The constriction was relieved, the dead tissue cut away, and immediately urine began to flow.

During the night convulsions began, and the child vomited incessantly.

Oct. 18, stump of gangrene came away in a lump.

Oct. 23, a large abscess over right scapular region was freely incised, and convulsions reappeared.

From this time on the child gradually sank, and died Nov. 15 from exhaustion.—A. Brothers in *Medical Record*, 1897.

HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

WILLIAM OLDRIGHT, M.A., M.D. Tor.,

Professor of Hygiene in the University of Toronto ; Surgeon to St. Michael's Hospital ;

ASSISTED BY

J. W. SMUCK, M.D.

REPORT OF PROVINCIAL BOARD OF HEALTH FOR JUNE.

Total number of municipalities in the province, 745 ; number which made returns for June, 546.

Table showing total deaths returned from the several contagious diseases for a population of 1,527,744 were 211, or at the following rate per 1,000 for municipalities which made returns, calculated on a per annum basis. (Total population of the province, 2,233,117.)

	Population	No. of deaths from and rate per 1,000 per annum.						Total.
		Scarlatina.	Diphtheria.	Measles.	Whooping Cough.	Typhoid Fever.	Tuberculosis.	
Cities	429,399	12 (0.3)	15 (0.4)	3 (0.08)	1 (0.03)	2 (0.06)	72 (2.0)	105
Towns and villages reporting.	274,625	2 (0.08)	11 (0.48)	4 (0.17)	5 (0.22)	5 (0.22)	17 (0.74)	39
Townships reporting	823,720	3 (0.04)	13 (0.18)	1 (0.01)	5 (0.07)	5 (0.07)	40 (0.58)	67
Population reporting	527,744 (68.4%)	17 (0.1)	39 (0.3)	8 (0.06)	6 (0.04)	12 (0.09)	130 (1.02)	211

FORMALDEHYD.

This new antiseptic is creating a great deal of comment, and if the reports are to be relied on it is sure to prove very useful.

F. J. C. Bird, in *The Pharmaceutical Journal*, gives a table of its uses and the strength. One part of formaldehyd in the tables repre-

sents two and one-half parts of full strength, or forty per cent. solution of commerce :

- 1.125,000 kills anthrax bacilli.
- 1.50,000 prevents the development of typhus bacilli, etc.
- 1.32,000 preserves milk for several days.
- 1.25,000 forms a useful injection in leucorrhœa, etc.
- 1.20,000 preserves wines, weak alcoholic liquids, and beer, also milk for several weeks.
- 1.4000 is recommended for moistening paper used to cover jam, etc.
- 1.3200 for rinsing dairy vessels, etc.
- 1.2500 destroys the most resistant micro-organism in one hour.
- 1.2000 for rinsing casks and vessels intended for liquids liable to fermentation.
- 1.500 for the irrigation of catheters, etc., and as a mouth-wash.
- 1.250 to 200 is a general disinfectant solution for washing hands, instruments, etc., in surgery, spraying in sick rooms, and as a deodorant.
- 1.160 to 100 hardens microscopic tissues, which should be immersed for a considerable time to give the best results.
- 1.100 in lupus, psoriasis, and skin diseases.
- 1.50 to 25 sterilizes surgical catgut, silk, etc., by steeping.
- 1.25 for quickly hardening and preserving for microscopical sections; longer immersion in a weaker solution gives better results.
- 1.10 for hardening very firm tissues in pathological and histological work.
- 1.5 for hardening firm tissues in such work.
- 1.2½ for hardening soft tissues for the same purpose.

The fact that water absorbs it readily to the extent of a forty per cent. solution renders it easy of application as a disinfectant, and it is in this aqueous solution that it is found in the market, and is thus miscible with water to form any degree of strength desirable.

FIFTEENTH ANNUAL REPORT OF THE PROVINCIAL BOARD OF HEALTH.

The fifteenth annual report of the Ontario Board of Health has just been issued, and in addition to the usual data regarding deaths, etc., from contagious diseases, several very practical papers are presented.

For the first time an effort has been made to collect reliable and comparative tables showing the deaths from six most malignant of

the contagious diseases. Tuberculosis is given the place it deserves, and the most surprising fact presented is that this disease carries off more annually than all others combined.

The province appears to have been exceptionally free from communicable diseases. There have been some mild epidemics in various parts. Physicians are evidently managing these diseases much better, thereby preventing the spread and reducing mortality.

Each year shows increased activity in developing waterworks and sewerage systems in towns and cities, giving thereby a correct index of the progress of municipal sanitation.

Progress has been noted along the line of meat and milk inspection. There is a growing public sentiment which demands guaranteed purity in these two important items of food supply.

An important work undertaken by the board, for the first time during the past year, was the systematic inspection of summer resorts—a work apparently much needed, if our northern districts are to maintain their reputation of the past.

The laboratory has been patronized to a greater extent than heretofore, showing that the efforts put forth in this direction are appreciated.

The secretary of the board, Dr. P. H. Bryce, sums up by saying :

“ It may therefore be said that the year has been one in which progress has been made in the routine work which a public health department, organized to do work along the several lines which have been referred to, will from time to time be called upon to perform. That the results have advanced the general well-being and happiness of the people at large needs no demonstration, and that the appreciation both of the needs of public health work, and of the supplying of machinery for its extension and effectiveness, is slowly growing, is in several ways very evident.

“ That Canada should maintain the position already gained is but due to her past history, and that Ontario, the premier province in so many other matters, should in public health work do herself equal credit is the task which this board has always set itself to perform.”

PROGRESS OF STATE MEDICINE DURING THE SEMI-DECADE OF 1892-1896.

Dr. P. H. Bryce, Secretary of the Provincial Board of Health of Ontario, in report just issued, gives an very interesting chapter with above heading. He considers the matter under three divisions, (a)

Progress in the discovery in the causes of disease ; (b) Progress in the methods of cure of disease ; and (c) Progress in the prevention of disease.

The first section briefly epitomizes the knowledge we had of the causation of the various communicable diseases—excepting the true causes of tetanus—of septicæmia, of the plague or rinderpest, of the bubonic plague, and of several other animal diseases, have been well established. The cure and prevention of these diseases was at that time (1892) in its infancy. Professor Koch had given to the world the result of his investigation regarding “tuberculin.” The theory of the toxins was attracting attention, and Professor Behring has since given the result of his researches in the antitoxine of diphtheria. Tizzioni and others succeeded in curing tetanus. Yersin and Roux was able to definitely demonstrate the difference between true diphtheria, and the less harmful variety. Haffkine was doing his great work upon the causation and cure of the bubonic plague of India.

Septicæmia has been studied, and an antitoxine prepared to meet its effects, but probably the most remarkable activity in all branches, not only of human but animal sanitation, has been in studying tuberculosis. It is but recently that the disease, as found in cattle, was suspected to be the same as that found in man.

Prevention has had its share of thought, and the public are more and more coming to realize the importance thereof. In tuberculosis it has become a routine proceeding to diagnose by means of the sputum early cases, not only in order that steps may be taken for the proper treatment of the patient, but that precautions may be adopted for the protection of other persons exposed to such cases. In diphtheria we are enabled, so soon as the diagnosis has proven the disease to be real, to protect persons who have been exposed by prophylactic injection of the antitoxine.

In disinfection greater efficiency has been secured in perfecting apparatus and the use of some new methods, notably formaldehyde vapor.

Water filtration is receiving much attention, yet not more than it deserves. Many new avenues of prevention are opening, but great discoveries are only brought forth with infinite pains.

Editorials.

THE ONTARIO MEDICAL COUNCIL.

THE following sentence appears in the first editorial of our last number: "The discussions at certain sessions were decidedly breezy, but always commendable." The printer committed a very important error by leaving out the word "not" before "always commendable," as it appeared in the original manuscript. As a matter of fact, there appears to be a general impression abroad that there was less work and more talking done at the recent meeting than we have had for several years in connection with that corporate body. It is also freely stated that the tone of the discussions was far below what we have a right to expect in such an important deliberative assembly. Such appeared to be the opinion of the lay press, which to a large extent held the proceedings up to ridicule in a way that was rather humiliating to thoughtful members of the profession outside our medical parliament.

Never since the days of the "free fights" in the times of Berri-man, Dewar, Campbell, Wm. Clarke, etc., have personalities been hurled here, there, and everywhere, in a more reckless fashion than at this meeting. This may be accounted for partly through the fact that one of the most prolonged discussions took place over a motion which was entirely personal in its character, *i.e.*, the motion of censure on the conduct of Dr. Sangster in connection with a petition which was presented to the Ontario Legislature by a committee acting on behalf of the council. The proceedings of the meeting will be published in full, and the profession will then have an opportunity of learning both sides of the question. The fact that the motion was carried by a very substantial majority is a very serious one, and should impel the members of the college to read and consider carefully the details of the discussion, which will be found in the minutes.

CANADIAN MEDICAL ASSOCIATION.

THE thirtieth annual meeting of the Canadian Medical Association will be held in Montreal, August 30 and 31, under the presidency of Dr. V. H. Moore, of Brockville, Ont. In the programme we find the following directions about travelling to and from the meeting :

"Purchase a ticket for Montreal from the agent at the place of departure, and get from him a standard certificate (which is a receipt for one full single fare). When registering at the meeting leave the certificate with the treasurer, and it will be returned, signed by the Secretary, on the morning of August 31.

This certificate, when presented to the station agent at Montreal, will entitle the bearer to a ticket to his destination, free of charge.

N.B. No 1. These rates refer to members, delegates and their wives travelling from points east of Fort William.

N.B. No. 2. Delegates west of Fort William will communicate with Robt. Kerr, C.P.R., Winnipeg."

Those who are members of the British Association, or intend to become such, will probably find it more convenient and satisfactory to use the certificates furnished by Dr. Geo. E. Armstrong, of Montreal, as explained elsewhere in this issue.

In another column will be found the provisional programme, by which it will be seen that a certain amount of professional work will be done, especially in the way of clinical demonstrations at the Montreal General Hospital on Monday, August 30. Dr. Moore, the President, and Mr. Watson Cheyne, of London, England, will also deliver addresses on the same day. There will be a smoking concert in Windsor Hall on the same evening. On Tuesday morning, August 31, there will be a general session to receive reports of Nominating and other committees, to elect officers, and for general business.

BRITISH MEDICAL ASSOCIATION, MONTREAL MEETING, AUGUST 31.

WE desire to call the attention of all members or intending members of the British Medical Association to the following facts which will show how members may reach Montreal or take advantage of trips to any part of Canada, before or after the meeting, together with rates for such trips, etc.,

The names of all members of the Toronto branch have been forwarded to Dr. G. E. Armstrong, 320 Mountain street, Montreal who will send a certificate to any member writing for it, entitling him and any of his family to buy a ticket at any ticket office (railway or steamboat) in Canada to any part of Canada for half of one single fare, or return ticket for one single fare. He can purchase them at any time, to any point and as often as he likes. These rates are good from now till September 30.

If any one wishes to go to the Northwest before the meeting he can purchase a ticket from point of departure at same time, asking the local ticket agent to give a certificate saying he had purchased a ticket; if this certificate and the number of the certificate given by Dr. Armstrong is sent to Mr. W. F. Egg, 129 St. James street, Montreal, he will quote a price, and also send free passes over branch lines in Manitoba, Northwest Territories, and British Columbia, and over the C.P.R. steamboats. The price of such ticket to Vancouver is about \$70.45.

On receipt of the number of certificate given by Dr. Armstrong, Mr. Egg will quote price, send tickets and free passes altogether on receipt of money order for the amount.

It would be well for any of the profession, throughout the western part of the province, especially those who are not already members, but who wish to take advantage of all that the meeting affords, to make application for membership at their earliest convenience. It ought to be understood that only invited guests and members are admitted to the discussions and privileges.

Other information may be obtained by writing to Dr. Henry T. Machell, 95 Bellevue avenue, the acting secretary of the Toronto branch.

ROBERT M. COULTER, M.D.

DR. R. M. COULTER has been appointed Deputy Postmaster-General, and entered on the duties of his office August 1, 1897. He received his medical education in the Toronto School of Medicine, M.B. from the University of Toronto, and M.D. from the University of Victoria College, in 1882. In the same year he commenced practice in Aurora in partnership with Dr. Rutherford, and remained in these relations until the time of his appointment in the postal service. He soon attained success as a medical practitioner; and, as a Liberal, took a prominent part in politics, being

one of the best speakers and organizers in his party. He possesses exceptional ability, great tact, good judgment—in fact, a combination of qualities which are likely to make him an admirable executive officer. Notwithstanding Dr. Coulter's unfortunate Grit proclivities, which all good Tories, including the writer, must deplore, we feel confident that the Government could not have made a better selection. On the evening of July 27, there was held in Aurora a large and highly successful banquet, where Grit and Tory met together in peace and good will, with a desire to do honor to the popular and worthy young doctor and to extend their hearty congratulations and best wishes for his future success. At the same time his friends presented him with an address and a handsome cabinet of silverware. We desire to join the large body of well-wishers, and offer our cordial congratulations, with kindest wishes for many long years of health, happiness, and success to Dr. and Mrs. Coulter.

LADY NURSES.

THERE has been a good deal of discussion with reference to the merits and demerits of trained nurses in England. *The Practitioner* has said many things about them that are far from complimentary. In the July number it quotes from *The Hospital* as follows: "Many medical men, and those of the widest experience and highest authority, will confess that for private nursing they prefer the much abused 'housemaid' nurse, and that is a view which will be cordially echoed by those of the public who have suffered at the hand of her social superior, the 'lady nurse.' . . . It is a self-evident fact that ladies do not make the best private nurses, and one which few who have had experience in the management of a private nursing institution will deny." *The Practitioner*, on its own account, says: "Many people will continue to prefer the ministrations of an intelligent woman who does not disdain to put her hand to anything that will make them comfortable, and who, if she has not the accomplishments, is also free from the affectations of a lady nurse."

It is certainly unfortunate, and somewhat strange, if a lady or a gentlewoman in England cannot, by their system of training, become a good nurse. Experience in Canada has shown that only a limited proportion of women can be transformed into good nurses; but it has not shown that education, culture, and refinement are barriers to efficiency in a trained nurse. Is it not possible for a lady to be "intelligent" and willing "to put her hand to anything that will

make people comfortable," without those undesirable qualifications termed "affectations"? Is the woman who develops such "affectations" a gentlewoman, in the correct sense of the term, or was she ever such? Probably not.

Certain so-called lady nurses, who give themselves airs, and require extra servants to look after their comforts, are useless creatures—not ladies. It is difficult to give proper titles to such people; but, if they were males, they would be termed cads—a nasty but expressive term. Let us drop the word lady (a person in these modern days with new views difficult to describe) and choose for our ideal nurse a good, pure woman, who can talk and read English, who is kind and considerate, discreet and tactful, who truly loves nursing, and willingly subjects herself to the discipline of a good training school, and during her course exhibits those higher qualities which are so necessary for her vocation. Such a one is a jewel—hard to find—but she exists. Call her what you will, but speak no ill of her.

Correspondence.

VICTORIA, B.C., August 1, 1897.

To the Editor of THE CANADIAN PRACTITIONER :

DEAR SIR,—It will be agreeable to you to hear of honors being paid to our former classmate. I refer to the presentations made to Dr. W. A. Richardson (Tor. '86), who for seven years has faithfully served us as resident physician of our city hospital and who now leaves us for the incomparable Yukon. During his term of service he has proved himself accommodating and efficient and has administered the affairs of the hospital with a view to effectiveness and extension.

On Thursday evening last the nursing staff of the hospital, ward maids, and other employees surprised the house surgeon by waiting upon him to say good-bye. The matron, Miss McMillan, with appropriate words expressed regret in parting with one whom they esteemed so highly, and presented him with a purse containing not a few pieces of gold as a slight token of respect from his co-laborers and as a foretaste of the many nuggets that awaited him beyond the mountains upon the golden Klondyke. The surprise to Dr. Richardson was complete. There are times when words fail to express. This was one of such times. A speech was out of the question. He thanked them all, and thanked them again.

The evening previous to his departure a representative gathering of the medical men of the city waited upon the doctor and presented him with an address and a complete outfit of surgical instruments. Complimentary addresses were delivered by all present. Dr. Richardson, in replying, thanked those who had thus exhibited such a kindly disposition towards him, and promised them a warm place in his memory when he reached the region of 72° below zero.

ERNEST HALL.

The following is a copy of the address :

To W. A. RICHARDSON, M.B., House Surgeon Provincial Royal Jubilee Hospital, Victoria, British Columbia.

We, the undersigned members of the medical profession residing and practising in the city of Victoria, desire to express our apprecia-

tion of the valuable services rendered us by you during your residence amongst us.

For the able assistance and valuable advice which, during the past seven years you, in your capacity of house surgeon to the Provincial Royal Jubilee Hospital, were at all times ready to give us, we are greatly indebted.

Under your care we felt that our patients were exceptionally well looked after, and your varied experience and keen powers of observation rendered your services invaluable.

We feel that both socially and professionally we shall greatly miss you.

Decided in your opinions, you have always had the courage to express your convictions in a frank and manly manner.

As one result of this the profession here are largely indebted to you for the privilege now afforded them of treating their own free patients in the public wards.

We ask you to accept and take to the remote regions of the Klondyke this case of surgical instruments; trusting that, although they are unsuitable for ordinary gold mining, they may assist you in working the professional bonanza we feel is waiting for one possessing your high professional abilities.

July 31st, 1897.

Signed, etc.

Book Reviews.

THE DISEASES OF THE STOMACH. By Dr. C. A. Ewald, Extraordinary Professor of Medicine at the University of Berlin ; Director of the Augusta Hospital, etc., etc. Translated and edited with numerous additions from the third German edition by Morris Manges, A.M., M.D., Assistant Visiting Physician in Mount Sinai Hospital, Lecturer on General Medicine at the New York Polyclinic, etc. 600 pages. Profusely illustrated. Price ——. New York : D. Appleton & Company. Toronto : G. H. Morang, representing D. Appleton & Company, 63 Yonge street.

The second American edition of this work is at hand, and in it we find a considerable amount of new material. The last German edition (1893) is a complete revision of the former ones by Prof. Ewald, and this American edition is that edition complete, with the addition of all the investigations carried on since its appearance. The amount of additional matter added by the learned translator is exhaustive, and always of a very important nature.

That the first edition was exhausted so soon and a demand for a second established, shows what value the profession place on the work. It is undoubtedly the classic on diseases of the stomach. We reviewed the work in its former edition, and find that the present one contains so much new material that possessors of the former edition will undoubtedly purchase the new one. Those not possessing the work should have it at once in their library.

NEW VOLUME OF HARE'S SYSTEM OF PRACTICAL THERAPEUTICS. Vol IV. *A System of Practical Therapeutics.* By eminent authors. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 1100 pages, with illustrations. Regular price, cloth, \$6 ; leather, \$7 ; half Russia, \$8. Price of Vol. IV. to subscribers to the *System*, cloth, \$5 ; leather, \$6 ; half Russia, \$7. Price of the *System* complete in four volumes of about 4,500 pages, with about 550 engravings, cloth \$20 ; leather, \$24 ; half Russia, \$28. Lea Brothers & Co., Publishers, Philadelphia and New York.

This volume is issued to bring the "system" absolutely up to date. We are glad to see the subject of therapeutics receive the attention that is now given to it. The treatment and prevention of disease is of vastly more practical importance to the patient than the morbid process in detail can ever be. Pathology to-day is doing a great deal to establish a scientific system of therapeutics in the future, but in the meantime we must look out and keep the subject of treatment as nearly as possible abreast of the other departments. This Volume IV. will do a great deal for the busy practitioner ; it will present to him clearly and concisely, yet not too briefly, the advancement in therapeutics of the past two or

three years—and taken with the preceding three volumes make a compendium that one cannot well afford to be without. It is a practical impossibility to review each of the thirty-three articles, which cover 1,050 pages.

Dr. O. Edwin Solly has compiled the "Present Treatment of Tuberculosis" into a most instructive chapter. He deals with the subject of tuberculin as a means of diagnosis, and as a method of treatment. Maragliano, of Genoa, who in 1895 described his serum treatment, has received ample space, and the advantages of the method pointed out. Then nuclein, investigated by Dr. Vaughan, of Ann Arbor, is brought up to date. The antiseptic treatment, and treatment without drugs and climatic treatment, are all brought up to the ideas of the immediate present.

"The Present Treatment of Syphilis," by Dr. Edward Martin, is one of the most readable chapters in the volume; it contains all that is new and the good of the old. He advocates the excision of the initial lesion. This we are delighted with; it is the advanced idea undoubtedly.

The antitoxin treatment of diphtheria is thoroughly reviewed under the caption, "New Facts and Methods in the Treatment of Diphtheria," by Dr. William Hallock Park. A fact wisely pointed out is well worth noting. "If the inoculation with the antitoxin follows within a short time that of the poison or living germs, it will in greater amount still prove curative; but if the antitoxin is withheld until the animal is under profound constitutional poisoning, the antitoxin, without regard to dose, will prove valueless." This is true of animal experiments, and no doubt many reported failures are due to having allowed the disease to gain too great a hold before introducing the antitoxin. This is one of the most instructive chapters in the volume.

"Asthma, Bronchitis, and Whooping Cough," by Dr. Norman Budge, is well worth careful study. Many important points are brought out. In speaking of the treatment of whooping cough we do not think quite enough prominence is given to bromoform, which has yielded excellent results in our hands. The method of prescribing the same in water is not the best by any means, as the author says it does not mix. We administer it by dropping it on loaf sugar. The children eat the sugar readily. There is no danger by this method of giving a poisonous dose, as related in a recent issue of *THE PRACTITIONER*.

The chapter on "Typhoid Fever and Malarial Diseases," by J. M. Anders, M.D., LL.D., is very complete, although we miss from it an accurate description of the best methods of carrying out the antiseptic and eliminative treatment as laid down by Thistle and others.

Chapters on "Influenza," by Dr. H. A. Hare, "Scarlet Fever and Measles," by the same; "Pneumonia," etc., by Dr. J. B. Herrick; "Diseases of the Heart," Dr. F. P. Henry, etc., complete a most instructive volume, which, taken as a whole, is one of the best in the system, and deserves a very wide circulation. The presswork, binding, etc., are up to the usual good style of the Messrs. Lea Bros. & Co.

DISEASES OF EAR, NOSE, AND THROAT, AND THEIR ACCESSORY CAVITIES—a condensed text-book. By Seth Scott Bishop, M.D., LL.D., Chicago.

This, as its name implies, is a summarized work, intended chiefly for the use of students, and for general practitioners who desire to obtain a practical knowledge of the diseases which affect the ear, nose, and throat. There is no

intention on the part of the author to compete with the many thorough and exhaustive works already in the hands of the specialist, but a marked intention to fill up a long-felt gap, and in this, in a great measure, he has succeeded.

Notwithstanding the epitomized character of the work, the author, after giving his reasons for so doing, treats several subjects rather exhaustively. Whether in each case this was a wise policy to pursue seems somewhat doubtful, as it necessarily forced the treatment of other important subjects within very narrow limits. The divisions referred to are: the serum therapy in relation to diphtheria, the medical and surgical management of mastoid disease, and the treatment of hay fever. In regard to hay fever, however, exhaustive treatment was both wise and expedient, as the wider knowledge upon the subject is scattered among the profession the better will it be for that large class of people who are, periodically, sufferers from this disease.

Dr. Bishop divides his work into four parts: 1. Diseases of the ear. What makes this section particularly valuable is the large amount of clinical material upon which he was able to base his conclusions. This also enabled him to make tables of the comparative frequency of the different forms of ear disease. For instance, out of a table of 15,300 cases, 4,741, or nearly one-third, were affected by chronic non-suppurative inflammation of the middle ear. The next in order of frequency were the cases of naso-pharyngeal catarrh, the number being 2,476. And the third, the cases of impacted cerumen, numbering 1,690. After this there was a decided drop for the remaining aural affections.

The author devotes a good deal of attention to instruments and special methods of treatment. He lays strong emphasis upon the advantages of a wise use of compressed air. For instance, he thinks the old method of Politzerization for inflation of the middle ear has largely had its day, and must give way to a fuller and easier inflation by compressed air carefully and judiciously controlled. A similar comparison is made also between the use of the latter and the eustachian catheter, as by it he avoids the bruising which the catheter may sometimes produce.

He speaks of deaf-mutism as a rare condition, only half of one per cent., of all the cases of ear disease that he has seen, being of that class. In reading his etiology of deaf-mutism, one is struck by the fact that pressure upon the eustachian tubes by adenoids, on which eastern writers place so much stress, is not even mentioned as a cause.

2. Disease of the nose. This touches upon all the points of interest which the general practitioner would find of value to him. The only fault lies in the brevity upon certain lines already spoken of. This is more particularly marked in reference to the space allotted to nasal polypi, deformities of the septum, and naso-pharyngeal adenoids—all of which occupy a large place in the work of the specialist. Still enough is said to give the reader a general idea of the methods of treatment.

The article on hay fever is an able one, and may help to throw light upon this severe and often intractable disease. Unknown to each other, he and Dr. Shaw Tyrrell, of Toronto, have for years been advocating the idea that hay fever, to some extent, owed its origin to the presence of an abnormal amount of uric acid in the blood. Dr. Bishop's method of treatment is to administer the salicylates for several weeks prior to the onset of the disease in order to eliminate the uric acid as it forms. Then to revert to acid treatment, the moment that symptoms of hay fever commence to manifest themselves, not to eliminate the

uric acid, but to prevent its solution in the blood. According to this theory, the formation and retention of uric acid in the tissues, does not produce hay fever symptoms, but the presence of uric acid in the blood does. By combining this method, with local and operative treatment when required, the author claims to have met with excellent results in dealing with a large number of cases.

In antral disease, Dr. Bishop, like many other writers, prefers to penetrate for drainage through the alveolus.

In adenoid disease of children the anæsthetic recommended is ethyl-bromide, and the instrument used Eottstein's curette, the work being completed by digital operation.

3. Diseases of the pharynx. Within this division diphtheria occupies several chapters. In connection with it, prophylaxis has a very important place. In examining patients, the author advises the medical attendant to remove coat and vest, and put an operating gown or sheet from neck to feet. He also approves of the physician holding a pane of window-glass between the patient's mouth and his own face. Complete isolation of patient and nurse is insisted upon. After a critical review of the various methods of treatment, including serum-therapy, he concludes by saying: "While the serum is a powerful remedy and may be capable of doing harm, the disease itself is so virulent that, in view of the great weight of testimony and statistics in favor of antitoxin, the physician should not fail to avail himself of this addition to thorough local and general treatment."

4. This last part is devoted to the larynx. The ground here is pretty thoroughly covered, with the exception that pachydermia laryngis has not been mentioned, and that *purulent laryngitis* has been given as a synonym of *edema* of the larynx.

In reference to the identity or duality of croup and diphtheria, the author considers it still a mooted question. He comes out strongly in the opinion of the duality of the disease. In other words, he believes that there are two varieties of pseudo-membranous disease—the one diphtheritic the other non-diphtheritic.

On the whole, the work is well adapted to accomplish the end the author had in view. It displays thought and care in preparation, and from its conservative tendencies should have a good influence upon the student as well as the physician, who may add it to his library.

P.B.

LIPPINCOTT'S MEDICAL DICTIONARY; a complete vocabulary of the terms used in medicine and the allied sciences, with the pronunciation, etymology, and signification, including much highly valuable information of a descriptive and encyclopædic character, prepared on the basis of Thomas's Complete Medical Dictionary. By Ryland W. Greene, A.B., with the editorial collaboration of John Ashhurst, jr., M.D.; Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania; George A. Piersoll, M.D., Professor of Anatomy in the University of Pennsylvania; Joseph P. Remington, Ph.M., F.C.S., Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy. Complete in one imperial octavo volume of about 1100 pages. Price, cloth, \$7.50; sheep, \$8.50; half Russia, \$9; or with Denison's patent index, 75 cents extra. J. B. Lippincott Company, publishers, 1897. Montreal: Charles Roberts, 593a Cadieux street, general agent for Canada.

The work is the result of an endeavor to make a practical and useful medical lexicon.

It has been the aim of the editors and publishers in producing an entirely new medical dictionary to bring the book abreast of the times, not only by presenting all that is latest and best in medical literature, but also by developing that material according to the most approved methods of modern lexicography. It was thought best not to trust the work to a single hand, but by selecting a corps of collaborators whose names are authoritative in their several departments to give the book a freedom from personal bias and an authority of statement which could not otherwise be attained. The medical profession generally will agree, it is believed, that a better selection could not have been made. The name of Dr. John Ashhurst, jr., Dr. George A. Piersoll, and Professor Joseph P. Remington are too well known to need special comment.

The plan throughout has been to give complete, accurate, and useful information concerning every medical term that a student, physician, or general reader would be likely to meet in the course of his study and reading. To cover this wide range of subject it is necessary to deal with two classes of words; first, those old words that had their origin with the beginnings and natural development of medical science, and second, those words that have been coined to meet the manifold needs of modern medicine. Of this second class all are more or less useful, and a book which intentionally omitted any of them would not fill the requirements of an up-to-date dictionary. On the other hand, many words of the former class have long since passed out of existence, and to incorporate them in a dictionary would but serve to swell its bulk without increasing its usefulness. Therefore, in making up the vocabulary of Lippincott's Dictionary the plan has been to include the thousands of words added to medicine during the last few years, as well as the familiar terms usually found in a medical dictionary, and also such obsolescent or even obsolete terms as one might meet in an extended research into the standard medical literature of past generations.

As the essence of a dictionary lies in its definitions, the utmost care has been expended in rendering this part of the work particularly excellent. The constant endeavor has been to make the explanation of each word distinct and full without verbosity.

The system of indicating or expressing pronunciation adopted in this work is new and original. It is based on the scientific principle of phonetics as recognized by the best linguists of this and other countries.

In the matter of spelling, a wise conservatism has toned down the radical tendency of the times into a moderate course, suited to a decent and literary use of the language, good usage and thoughtful consideration rather than a hasty enthusiasm being the guides.

There is one respect wherein medical dictionaries have heretofore been somewhat behind their fellows in other departments of lexicography, and that is in the preparation of the proof for the press. To this point the editors of Lippincott's Dictionary have given every attention. The work has received the benefit of the most expert professional proof-reading, and each editor has read the proof throughout and made the necessary revisions and additions to embrace the latest advances in medical science and literature.

We are immensely pleased with the dictionary, and know of no one-volume work that equals it. The binding and paper are substantial.

Medical Items.

DR. THOMAS B. FLETCHER (Tor. 93) has been appointed an Associate in Medicine in Johns Hopkins Hospital, Baltimore.

WE are glad to be able to state that the custom adopted a few years ago by the authorities of the Toronto General Hospital of allowing all physicians and surgeons of good standing in the city to treat their own patients in the private wards has proved quite satisfactory.

DR. BAYARD, the able and genial veteran of St. John, N.B., completed sixty years of active practice August 1, 1897. We are pleased to learn that he is enjoying good health, and is still able and well qualified to continue his ordinary professional work. That he may long continue to do so is the earnest wish of his numerous friends in this part of the province.

DR. WM. KLEE, of Johns Hopkins, Baltimore, after spending a few days in Toronto, left for St. Andrews, N.B., where he is likely to remain until September, with the exception of a couple of visits—one to Toronto during the meeting of the British Science Association, another to Montreal during the meetings of the Canadian Medical Association, and the British Medical Association.

THE STAFF OF '92.—The eight resident physicians in the Toronto General Hospital in 1892 had a pleasant reunion in Toronto, August 4, when they dined at the Board of Trade. Dr. Charles O'Reilly, Superintendent of the Hospital, was also present. Of the eight, five are practising in Toronto, viz., Drs. J. N. E. Brown, H. B. Anderson, H. A. Bruce, H. Parsons, and F. Fenton. The remaining three are Dr. T. H. Middlebro, Owen Sound; Dr. A. S. Tilley, Bowmanville; Dr. H. Way, Chicago.

HOME FOR CONSUMPTIVES.—The treasurer of the Sanitarium Association acknowledges the receipt of \$10 towards the Muskoka Home for Consumptives from Mr. F. Rogers, Enniskillen. Friends of the Consumptive Hospital in Hamilton have started the idea of a Hamilton cottage, to be built adjoining the Administration building in Muskoka. Senator Sanford has given \$200 for this purpose. It is proposed to build a cottage for four patients, costing \$2,000, to be set apart for the use of patients from that city. Information is received that the people of Port Hope are proposing to make a jubilee offering in the same direction.

DONALD JOHN ARMOUR, M.B., M.R.C.P.—We are glad to hear of "Don" Armour's continued success in London. Shortly after he went to London, in July, 1896, he passed the examination for the double qualification of M.R.C.S. Eng., and L.R.C.P. Lond. At the examination in July, '97, he passed the examination for membership. So far as we know the only other Canadians who have received this qualification are Dr. Wm. Osler, now of Baltimore, and Dr. James E. Graham, of Toronto, and Dr. P. D. Goldsmith, of Belleville. Dr. Armour will remain in London for a few months and will then go to Germany. He will probably return to Canada in 1898.

TOO LATE.—An English woman recently met with sudden death during a visit to St. Petersburg, and at the request of relatives in London the body was immediately forwarded to England. When the casket, a magnificent affair, arrived at its destination, the lid was removed to give the sorrowing relatives a final look at the departed. But instead of the emaciated remains of an aged woman, the portly corpse of a Russian general, covered with decorations and in the full glory of a state uniform, met the gaze of the mourners. Frantic messages were at once despatched to the Russian capital, and in response to one of them the following message was received: "English lady buried yesterday with military honors. Please keep the general."

MISSISSIPPI VALLEY MEDICAL ASSOCIATION — MEETING AT LOUISVILLE OCT. 5, 6, 7, 8, 1897.—The Executive Committee met recently at Louisville, in conjunction with the local Committee of Arrangements, the following being present: Drs. Stucky, Grant, Mathews, Love, Holloway, and Reynolds. It was determined to make the coming meeting the largest and best in the history of the association, and everything points to a fulfilment of this endeavor. The railroads will make a round-trip rate of one and a-third fare, or probably one fare. The address on Surgery will be delivered by Dr. J. B. Murphy, of Chicago; the address on Medicine by Dr. John V. Shoemaker, Philadelphia. Title of papers should be sent to Dr. H. W. Loeb, secretary, St. Louis, Mo.

BRITISH MEDICAL ASSOCIATION, MONTREAL MEETING.—The British Medical Association which will meet in Montreal August 30, September 1, 2 and 3, unfortunately comes at a time when the hotels, lodging houses, restaurants, etc., in Montreal are taxed to their fullest capacity owing to American tourists who select this particular season of the year for the St. Laurence route. The reception sub-committee of the Association of which Professor Ruttan, McGill College, is Secretary, will be very glad to arrange for the accommodation of any Canadian members who will communicate with him stating the kind of accommodation required. He writes us strongly to advise everyone who purposes attending to secure rooms in advance. In addition to the hotels, lodgings have been arranged for in the neighborhood of McGill University, where rooms and breakfast may be obtained at moderate rates.

MEETING OF CANADIAN MEDICAL ASSOCIATION.

PROVISIONAL PROGRAMME.

Monday, August 30, 1897.—1 p.m., Clinical Demonstration, Montreal General Hospital. 3 p.m., General Session. (Synod Hall, No. 75 University st., cor. Burnside); Address by Chairman of Local Committee; The Reception of Visitors; Election of Members; Notices of Motion: (1) "That the number comprising the Nominating Committee be increased from ten (as formerly decided by By-law) to fifteen, the latter permitting of a more general representation."—T. G. Roddick, Montreal; (2) That the By-law relating to the Nominating Committee be amended to read: "That the Nominating Committee be elected by the association, on the first day of each annual meeting, by ballot, after nomination."—R. W. Powell, Ottawa. 4 p.m., President's Address, V. H. Moore, Brockville, Ont. 4.30 p.m., Address by W. Watson Cheyne, London, Eng.; Appointing of Nominating Committee; Appointing of other Committees; General Business. 8 p.m., Smoking Concert in Windsor Hall.

Tuesday, August 31.—9.30 a.m., General Session, Synod Hall; Report of Committee on Inter-Provincial Registration; Report of Nominating Committee; Reports of other Committees; General Business.

For further particulars address F. N. G. Starr, 471 College street, Toronto.

OBITUARY.

EDWARD M. HIGGINS, M.D.—Dr. E. M. Higgins died July 18, 1897, aged 42. He was the only son of Major Higgins, of Kingston, and was born at Quebec. He graduated from Queen's University in 1877, and soon after became surgeon to one of the Allan line steamers, which position he retained about ten years. During this time he contracted rheumatism, from which he never fully recovered.

EGERTON GRIFFIN, M.D.—Dr. E. Griffin, of Brantford, died August 7, 1897, aged 68. He passed before the Upper Canada Medical Board in 1853, and received the degree of M.D. from the University of New York in 1854. In the same year he commenced practice in Brantford, where he remained up to the time of his death. He received the degree of M.D. from Trinity University in 1874. He was appointed Medical Health Officer of Brantford in 1885, and was also surgeon to the gaol. The cause of death was said to be abscess of the liver.





LORD LISTER

THE CANADIAN PRACTITIONER

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THE RIGHT HONORABLE LORD LISTER.

NO man of the empire, no man in the world, has ever received a more cordial welcome from Canadians than Lord Lister. The members of the medical profession of this Dominion are especially enthusiastic over his visit to Canada. We recognize the fact that we have amongst us the greatest surgeon of this century—the greatest surgeon of all time. We all admire him for the great work he has done for the human race ; we all love him for his kindly manner ; we all respect him as a hero among men. Who can forget his face—full of dignity, full of strength, full of sweetness ? Some think that a surgeon, who has handled the scalpel for many years, must become hardened and cold blooded. Lister is a noble, living evidence of the fact that such is not the case, that there is nothing in the practice of medicine and surgery that has any such effect on a good and broad-minded man. The whole world is paying homage to Lister for his greatness ; and yet he, who has received the highest honors ever bestowed on any man of science, is one of the most modest and unpretentious men living.

SHORT HISTORY OF LORD LISTER'S LIFE.

Lord Lister is a hale and hearty Englishman, seventy years of age. The portrait which appears in this issue is fairly good, but it doesn't show all of Lister. No picture can do that. Those who have had the pleasure and privilege of coming into close contact with him can well appreciate the force of this statement. He was born in Essex county, in 1827. As a youth he lived in a good atmosphere with his father, Joseph Jackson Lister, who was a Quaker, and at the same time a man endowed with a great love of science. He received the degree of B.A. from the University of London in 1847, and the degree of M.B. from the same university in 1852. During his student life he worked faithfully in the laboratories carrying out original investigations in physiology and pathology. He was also active in the hospital wards, and was one of the first house surgeons under the late Sir John Eric Erichsen.

After graduating he went to Edinburgh where he continued his researches in physiology and pathology, devoting most of his time to pathology. While in Edinburgh he became closely associated with the late Professor Syme. In a paper by Dr. Stewart, of Halifax, published in this issue, we learn something about the great importance of Lister's researches for several years in pathology. His results were published in the Transactions of the Royal Society for 1858. He was appointed Regius Professor of Surgery in the University of Glasgow in 1860, and did much of his earlier work in connection with antiseptic surgery in the Royal Infirmary of that city. His work in Glasgow and Edinburgh made him famous, and in the latter part of 1876 he was induced to go to London to take a position on the staff of King's College Hospital. He entered on his duties there with the distinct understanding that he was to have complete seclusion of his own wards, with a house surgeon, and nurses completely under his control.

At this important time in his career he encountered considerable opposition. Many of the surgeons of London endeavored to belittle his results so far as they were published. Many of those who criticized his methods had no clear conception of the principles underlying his system of treatment. The spray was unduly exalted to such an extent that its use was considered by many to be Listerism, while it was, in reality, only one, and that the least important feature of his treatment. At the same time many of the continental surgeons, especially those of Germany, understood Lister and his methods better than the majority of his confreres in Great Britain. Some prominent surgeons went so far as to state that he suppressed statis-

tics because "he had none that he would not be ashamed to produce." The following is an example of some of the unpleasant things insinuated: "The publication of isolated cases, however good, proves nothing, whereas the withholding of the whole suggests much." These were the words of Mr. Bryant, of London, and were endorsed by Mr. Savory (afterwards Sir William Savory) who quoted them with approbation in his address on surgery, British Medical Association, meeting at Cork in August, 1878.

While referring to such adverse criticisms, we will quote the following as an example of a very friendly opinion concerning Lister and his methods, from the address of Mr. John Wood, F.R.S., during the discussion of Sir William MacCormac's paper on antiseptic surgery before the South London Division of the Metropolitan Counties Branch of the British Medical Association, December, 1879: "While thus defining the limits of my agreement with my esteemed colleague, Professor Lister, I must take this opportunity of congratulating him sincerely upon the possession of those advantages which have made him so powerful an advocate of antiseptic surgery, and will give him so high a niche in the temple of fame; upon the professional position, which has given him the authority; upon the gifts of fortune which gave him the means; upon the gifts of nature, which gave him, in happy combination,

The patient thought, the steadfast will,
Resolve and foresight, strength and skill,

which he has laid upon the altar of suffering humanity." *

Lister continued to work with earnestness and zeal, and gradually, but surely, gained ground until he finally triumphed to such an extent that he practically overcame all opposition. His uniform kindness, and courtesy towards his opponents, did much to secure this happy condition of things. He was able to simplify his appliances in a few years, especially when, in 1885 or 1886, he decided to disregard the influence of atmospheric dust on open wounds, and discarded his spray apparatus. His improvements in these respects did much to popularize his methods in various parts of the world.

LORD LISTER IN PROFESSIONAL AND PRIVATE LIFE.

Lord Lister is one of our best specimens of the modern, cultured scientific surgeon. Since boyhood he has been diligently searching after truth, and helping others in the same direction. Thoughtful physicians and surgeons, obstetricians, general practitioners, and specialists in all civilized countries have learned something—generally much—from this great and good man. Never in the history of the

* MacCormac, *Antiseptic Surgery*, page 77.

world has any one man taught so much, and done so much to ennoble our profession. He it was, or such as he, that went to Drumtochty, and performed the operation which saved the life of Tammas Mitchell's wife. It is rather pleasant to have a picture in one's mind of Lister and MacLure driving together through the flood, in Drumsheugh's dog cart, to see Annie Mitchell, "whose life was slowly ebbing away." It is easy to imagine how Lister would tear into fragments poor kindly MacLure's cheque, and how he would hold out his hand as the train was starting, and say: "give us another shake of your hand MacLure; I am proud to have met you; you are an honor to our profession. Mind the antiseptic dressings."

Many are the honors that have been literally heaped upon Lister at home and abroad. Great was the delight of the medical world when he was elevated to the Peerage on account of the great services he has rendered mankind by his practical researches, and his clinical work in aseptic and antiseptic surgery. Great was our regret when we understood he was to relinquish the name Lister—the name we had learned to love so well—and become Lord Kinneir. Great was our pleasure when we discovered our mistake, and found that we were not in any sense to lose our Lister, whom we now know as the Right Honorable, the Lord Lister. Many are the ovations he has received outside of Great Britain. One of the most memorable was that which he received at the great International Medical Congress in Berlin, August, 1890. There were seven thousand persons in the Circus Renz at the opening ceremony. When Professor Virchow, attended by a brilliant company of ministers, and other distinguished men, ascended the tribune, applause burst forth again and again as various celebrities came into view; but it was Lister who was met with the most prolonged applause. Again at the first general meeting, when he stood up to deliver his address on Antiseptic Surgery, he was greeted with applause so long continued that he had to wait some time before he could make himself heard.

LORD LISTER IN TORONTO.

Lord Lister's first appearance in public in Toronto was at the civic reception to the British Association for the Advancement of Science in the pavilion in the Horticultural Gardens, August 18. In reply to an address of welcome, delivered by His Worship, Mayor Shaw, he, as the retiring president of the association, spoke as follows:

Your Excellency, Mr. Mayor, My Lords, Ladies, and Gentlemen,—As almost the last act of my presidency of the British Asso-

ciation, it falls to my lot to say a few words on the present occasion. I have, in the first place, to thank your Excellency for your kind words of welcome on behalf of the entire Dominion, and I thank you, Mr. Mayor, for your exceedingly kind words in the same sense. Our visit to Canada hitherto has been one of surpassing interest. All of us must have been astonished at the evidence which greeted us on every hand of your wonderful progress in material and intellectual prosperity, but I may say, perhaps, without being invidious, that if I compare what things were when I visited Canada last, twenty-one years ago, with what they are now, there is nothing that has surprised me more than the change in this noble city—whether I consider the vast extent of the city, the greatness and nobleness of your buildings, your splendid installation of electric cars, or, not least, the exquisite taste of your new university buildings and the beauty of the scenery in which they are located. I think that the University of Toronto is to be congratulated on having such a magnificent site, which has been so beautifully cultivated. I cannot fail to say a few words as to the joy that this reception gives me, as an indication of the increasingly tight bonds that unite the Dominion of Canada with the Mother Country. The ringing cheers that greeted your allusions more than once to this subject were enough to do good to the hearts of every Briton. I need not say more than that wherever we have gone hitherto we have met with the most generous kindness, and we feel that we have indications that nowhere is that kindness greater than in this city of your own. On behalf of the British Association, therefore, we tender to Canada as a Dominion, and to the civic authorities of Toronto, our best thanks for all that they are doing for us.—*The Toronto Mail and Empire*.

BANQUET AT THE TORONTO CLUB.

On the evening of August 21, he was entertained at dinner in a quiet way at the Toronto Club, by members of the club and a few of their friends, who wished to do honor to Lord Lister. Only members of the medical profession were present. The number was necessarily small on account of the limited capacity of the club dining room, and the committee decided to make it private or semi-private, because its members did not wish to interfere in any way with the large banquet which had been tendered to Lord Lister, Lord Kelvin, Sir John Evans, and other members of the British Science Association. Dr. J. Algernon Temple presided, and, after the toast to Her Majesty had been duly honored, proposed, in graceful terms, the health of the distinguished guest.

Lord Lister, in response, thanked those present for thus honoring him ; and referred to the great advances which had been made in Canada in scientific medicine, and said the work which was being done would compare favorably with what he had seen in Great Britain. He was at first inclined to be surprised at this fact ; but, when he thought of the men he had met in the old land, he considered there was not after all any occasion for surprise. He then spoke of his pleasant relationships with many Canadians, including his old friend Dr. Thorburn, and his house surgeons, Dr. Malloch, of Hamilton, Dr. Grasett, of Toronto, and others. Short and appropriate speeches were also delivered by Dr. Thorburn, of Toronto; Dr. Henry Barnes, of Carlisle, Eng., retiring president of the British Medical Association ; Dr. Roddick, of Montreal, president of the British Medical Association ; Sir William Turner, of Edinburgh (a grand man—we in Toronto think) ; Dr. Reeve, of Toronto ; Dr. Sheard, of Toronto ; Dr. Minot, of Boston ; Dr. Osler, of Baltimore ; Dr. Geikie, of Toronto. This exceedingly pleasant gathering will be long remembered by those present, whose names will be found in the diagram which appears on page 631.

UNIVERSITY OF TORONTO.

At a special convocation of the University of Toronto honorary degrees were conferred on a number of distinguished men. After the degree of LL.D. had been conferred upon Lord Lister he spoke as follows :

I assure you that I feel nowadays that the praise given to me is far beyond deserts, and never has it been better shown than by, if I may so speak of it, the exaggerated remarks by the president of the University. There is no doubt it has been to me an unspeakable joy to be able to minister in some degree to the benefit of humanity, but I cannot consider myself worthy, as it were, to unloose the tie of the shoe of men like Lord Kelvin. Nevertheless, scientific investigation, such as I have been engaged in the greater part of my life, has to me always been an unmixed joy, and when, as it happens to have been in my case, it is given to me to see the results of that work for the good of humanity, I can heartily say that the joy has been increased a thousand fold. I agree most fully with what Lord Kelvin has said, that science such as a University ought to teach should not be confined to the abstract knowledge alone, but should extend to the practical observation and demonstration. I feel that I have nothing to add to what Lord Kelvin has said in admiration of the wonderful progress of your University. I

SIR W. M. TURNER Edinburgh	F. LEM. CRASETT	LORD LISTER	J. A. TEMPLE Chairman	T. G. RODDICK President-Elect, B.M.A. Montreal	R. A. REEVE	HENRY BARNES President, E.M.A. Carlisle, Eng.
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W. H. B. Aikens						A. A. Macdonald

have already, on former occasions, expressed my admiration of your buildings, and if I have one word more to add to what has been said by Lord Kelvin it is that it has given me very great satisfaction to learn that your University pitches the standard of medical degrees high, and that it refuses to acknowledge those which are not of thoroughly sound standard. I trust the day may come when, as it is now with Great Britain, so it may be with Canada, your degree will confer a license to practise over the whole of Canada, and the license to practise anywhere in Canada will be accepted by you. Nevertheless, I feel that under the present state of things that can probably not be the case. When I was young, a man who was educated in medicine in Scotland and held the best Scotch degree of M.D., was not allowed to practise on that qualification south of the Tweed. That certainly was a gross injustice, because the Scotch qualification ranked higher than many of the English did. That has long since been removed, and, I trust, will be in due time done away with here, but only when through the length and breadth of Canada all the medical schools shall have attained to the same high degree of proficiency as that of the University of Toronto.—*Toronto Globe.*

UNIVERSITY OF TRINITY COLLEGE.

At a special convocation of the University of Trinity College, August 24, the honorary degree of LL.D. was conferred on Lord Lister, after which he expressed his thanks for the honor done him. Referring to the remarks of previous speakers on the English character of Canada and its people, he thought, if he made a comparison at all, that he would rather say that this country was an improvement on British soil. Its inhabitants were a stalwart and hospitable race, and he was certain that the climate was a great deal better than that of the old country. He was pleased at the prosperity of the University, and especially pleased at that of the medical school. He had been over two of the hospitals, and he might say that he had received no greater pleasure during his visit here than in remarking the evidences of their efficiency. He asked to be excused if through ignorance he should seem to presume, but to a stranger it was a remarkable thing that there should be two great Universities in the same city. He could not see why the two great bodies should not be blended into one stronger body.

During the speech Lord Lister referred to the fact that he had had the opportunity of inspecting the Toronto General Hospital, and spoke in the highest terms of praise of its efficiency and excellence of management.—*Toronto Mail and Empire.*

BANQUET IN THE HORTICULTURAL GARDENS.

At the banquet in the Horticultural Gardens, Toronto, to guests of the British Science Association, His Excellency, Lord Aberdeen, presiding, Lord Lister said : " Your Excellency, I have, in the first place, to thank you for the generous terms in which you have referred to my work, and this great company for the equally generous manner in which they have received your observations. I have also to express my deep sense of gratitude for the privilege of being a guest at this splendid banquet. But, turning from these considerations, I would express my very great satisfaction at beholding this splendid spectacle which is before me. In the first place, it seems to me that as the giving of a banquet to members of the British Association is not a common feature of the Association's meeting, this banquet must be taken as the cream of the generous hospitality which Toronto has afforded to us. In the second place, it is an indication of the great interest which Toronto takes in scientific progress ; and in the third place, it is a most striking example—when we, for the most part English, Scotch, and Irish members of the British Association, are accorded this splendid reception by you—it is a glorious instance and illustration of the kindly feeling which Canada entertains towards the Mother Country. And lastly, I would refer to the very beautiful spectacle which the galleries present. At the Liverpool meeting we had many of the fair sex in the galleries, but we certainly had not such a galaxy as I see before me this evening. We must take this, too, as another indication of the sympathy which Toronto feels for science and for Britain."

OTHER ECHOES FROM TORONTO.

Lord Lister was a busy man while in Toronto on account of his official connection with the British Science Association, but he found time to look around the city to some extent. Accompanied by Dr. Grasett he went through the Toronto General Hospital and the Hospital for Sick Children, and expressed himself as well pleased with what he saw in both of these institutions. A large number of physicians of Toronto and other parts of Ontario were presented to him, and all were charmed with his kindly manner and unvarying courtesy.

But the interest in Lord Lister was not confined to the members of the medical profession. Faith Fenton, of the *Toronto Mail and Empire*, who watched the proceedings of the meeting of the British Association, and made many comments thereon, wrote as follows :

"It is a pretty way they have of saying farewell ; gathering together for an hour, as they did yesterday afternoon, to utter the formal thanks and good-byes. And it was equally a courteous way, and an evidence of the fine English breeding of our guests, that the most famous among them was careful to be present.

"To the little upper room came Lord Kelvin, Lord Lister, Sir John Evans, Sir William Turner, Sir George Robertson, and all the men of magnificent minds, whose faces have grown so familiar to us during the past week. They were not too weary nor yet too impatient to say 'Thank you' and 'Good-bye,' and to say them graciously, and simply as a child.

"We listened and looked at each one of them in turn ; but our gaze lingered longest and last on the dearest old face of all, a face whose loveableness we shall always remember—that of Lord Lister."

Speaking for Toronto, we have to say, with deep regret, that Lord Lister has gone. He left our city August 27, with a distinguished party, on a trip to the Georgian Bay, Algonquin Park, Ottawa, and Montreal. We may never see him here again, but many of us will hope to see him in the motherland. May God bless him and spare him for many years of health, happiness, and usefulness !

LORD LISTER IN MONTREAL.

Lord Lister's reception in Montreal was quite as cordial and enthusiastic as in Toronto.

On Tuesday evening, August 30, the Montreal Medico-Chirurgical Society entertained him at dinner. The chair was taken by the President, Dr. G. W. Wilkins, who, after giving the toast of the Queen, proposed the health of the Governor-General. Lord Aberdeen, in responding, expressed the pleasure which it gave him to share in the compliment paid by the Society to Lord Lister, who had so well earned the honor conferred upon him by the Queen. Dr. Wilkins also gave the toast of Lord Lister, and presented to him an illuminated address signed by the officers in the name of the Society. The address was as follows :

MY LORD.—The members of the Montreal Medico-Chirurgical Society rejoice in the opportunity afforded them of congratulating your lordship on having been selected by the best Sovereign that ever graced a throne for the high distinction of the Peerage. No one in the medical profession was more worthy. Through a long period of years you have, through methods, well nigh perfect, sought after truth with an intelligence and discernment given to few, with a patience and assiduity, and, above all, with a truthfulness and

modesty that cannot but exert a salutary influence on all searchers for scientific truth, and with a success unsurpassed in the history of modern medicine. These purely scientific researches of your earlier years were the foundation on which at a later period you built the magnificent structure of antiseptis which placed you on the scroll of fame with Harvey, Hunter, Jenner, Simpson, and Pasteur. In advancing scientific and practical surgery you have advanced every branch of the healing art, and by investigations which have led you to the detection of the causes of disease you have brought us to a knowledge of the hindrances to the healing process. Henceforth, present and future generations may point to your lordship with pride as the man who has brought relief from suffering in every quarter of the globe. May your years be many, and may they be filled to repletion with the happiness which is born of having done nobly and well.

Lord Lister replied in a short but sympathetic speech, thanking the society for the honor done him. He appreciated it as one of the highest which could be paid to him, coming as it did from members of his own profession.—*British Medical Journal*.

DR. RODDICK ON LORD LISTER.

Dr. Roddick, in his presidential address, referred to Lord Lister as follows :

But we are further honored by the presence among us to-day of the most illustrious surgeon of our generation, Lord Lister, who stands for the rise and zenith of modern surgery. It has been well and truly said that as long as surgery is scientifically discussed Lord Lister's name cannot fail to be mentioned. We have only to compare the surgery of the time before 1873 with the surgery as practised to-day to appreciate all that he has done for the science. Can it for a moment be questioned that Lord Lister has made operative proceedings possible which only twenty-five years ago would have been considered criminal? Undoubtedly, the most powerful agency in the development of surgery in this century has been the introduction of the antiseptic and aseptic methods of wound treatment, which he initiated. It is due to his efforts that surgical wards have been freed from pyæmia, and the mortality of lying-in hospitals reduced to the limits of normal parturition. For the past twenty years honors many and great have been showered upon him. Oxford, Cambridge, Edinburgh, Glasgow, Dublin, Toronto, and now McGill, have vied with one another in hastening to do him homage. Our Sovereign in conferring upon him the richly deserved distinction

which he bears with such gracious dignity only gives expression to the general feeling of his countrymen throughout the Empire and his admirers the world over. We are glad, I say, to have him with us to-day; his presence is an intellectual stimulus and an energizing force in our deliberations.—*British Medical Journal*.

LORD LISTER IN WINDSOR HALL.

After the President finished his address Lord Lister arose to propose a vote of thanks, and received another of those grand ovations which have become so common in his marvellous career. The whole vast audience arose, and cheered in true British fashion, at the same time waving their pocket handkerchiefs. The members of the fair sex showed, if possible, more excitement and enthusiasm than those of the sterner sex. Faith Fenton, of Toronto, evidently has many rivals in Montreal.

When he was allowed to speak he said he could testify from personal experience to the value of one of the health resorts to which Dr. Roddick had referred, having just returned from the Muskoka region. He had never seen a more lovely country, and he could not conceive of a more healthy district. One felt some doubts whether special health resorts were necessary for Canada, for the whole population struck him as being remarkably healthy as compared with that of the mother country. Dr. Roddick had also spoken of the medical schools and it was very pleasing to hear of the progress Canada was making in the character of her medical education. He had had some opportunity of seeing both the hospitals and educational institutions in Canada, and from what he had seen he could quite bear out all that Dr. Roddick had said.

There was another matter which helped to confirm him in this opinion. When he used to teach surgery long ago, a considerable number of his students were from Canada. These students from Canada studying in England and Scotland had become more and more rare, implying not that the young men of Canada undervalued a good education, or would not go far to get it, but that they had at home what they required. With regard to medical legislation, Dr. Roddick had touched upon a subject which seemed to Lord Lister one of extreme difficulty. Dr. Roddick had spoken of a central examining board. The great objection to such a central examining board was that the examinations must be conducted more or less by men who are ignorant of the courses of the individual students in the various schools. His own impression was that the system which prevailed in England would be a better one, namely, that there

should be a central body corresponding to the English General Medical Council which should appoint visitors to the various bodies entrusted with the power of giving licenses—and that these visitors should report to the General Council. If any of the institutions were found after warning to be distinctly behind what was required, the Medical Council would report to the Privy Council, and the Privy Council would deprive this recalcitrant body of the power of granting licenses, or at least suspend it. In his opinion, this would be a more simple manner of attaining the object, and at the same time would not interfere with what seemed to him a matter of vital importance, namely, that the students should be encouraged in their career and have justice done to them in their examinations by knowing that their teachers would take some share in those examinations. He felt that it would be ungracious not to express his thanks to Dr. Roddick for the exceedingly generous terms of the reference to himself in the presidential address, and for the equally generous response that the reference met with in this great Assembly. As there was no other speaker to follow him except the seconder of the resolution, who would be a Canadian, he wished to express the gratitude of the British Medical Association for the cordial welcome extended to them by the entire Dominion of Canada through His Excellency the Governor-General; from the Province of Quebec through the Lieutenant-Governor; and from the City of Montreal through the Mayor. It was no surprise to him, for he had just been attending the meeting of the British Association in Toronto, and this was merely a repetition of that magnificent hospitality. There was, however, one thing which was new and which had pleased him exceedingly. He had read of the loyalty of the French-Canadians to the British Crown, of their fellow-feeling with their fellow-subjects of British origin, but it had given him the greatest gratification to hear those sentiments from the lips of a French-Canadian, and expressed so nobly, and in such splendid language as that to which Sir Adolphe Chapleau had given utterance.—*Brit. Med. Journal*.

PROFESSOR CHARLES RICHEL AT LAVAL UNIVERSITY.

Professor Richet, delegate of the French Government and of the Faculty of Medicine of Paris, delivered an admirable address on "The Work of Pasteur," Tuesday evening, August 31st, in which he made the following allusion to the application of microbial theories to surgery:

There was a time when erysipelas, purulent infection, and hospital gangrene decimated those upon whom operations had been

performed, when puerperal infection claimed a terrible number of victims. It seems to us nowadays that the medical profession before 1868 were blindfolded, and that their blindness was almost criminal. These are now no more than historic memories. A sad history, doubtless, but one which we must look at coolly in order to understand what science can do for medicine. Left to their own resources, practitioners of medicine during long centuries could do nothing against erysipelas, against purulent infection, against puerperal infection, but, basing itself upon science, surgery has been able to triumph over these odious diseases and to relegate them to the past.

Let me here introduce a reminiscence. When, on the occasion of his jubilee, a great celebration was prepared for Pasteur in the Sorbonne, in the presence of the leading men of science of the world, there was a moment when all hearts were softened—the moment when the great surgeon who was the first to perceive how to apply to the practice of his art the theory of pathogenic parasites, when Lord Lister drew near to Pasteur and gave him a fraternal embrace. These two great benefactors of humanity, united in their common work, afforded a spectacle never to be forgotten, a striking reconciliation of medicine with science.—*British Medical Journal*.

LORD LISTER AND M'GILL UNIVERSITY.

After the honorary degree of LL.D. had been conferred on Lord Lister, he said he had to express his profound sense of gratitude to them for conferring upon him the degree in that the greatest University in the great Dominion of Canada. Before the meeting of the British Association, he, in common with many other members of the Association, was a partaker of their splendid hospitality and had the opportunity of inspecting their magnificent new University buildings, and their splendid equipment, which was due in no small measure to the Chancellor and other munificent donors and citizens of Montreal. He was astonished at the splendor of their new buildings and their equipments. He had seen their Laboratories; for example, the Physical Laboratory, the Mechanical Laboratory, and others, and they were second to none in the world. Having visited Canada twenty-one years ago, to see the immense change which had come over Montreal as a whole, and above all, their University, filled him with amazement and admiration. His words he knew ought to be very few, and he would only venture to add that it seemed to him to remain now for their teachers and their students to avail themselves to the full of their splendid opportunities, so that

practical instruction and research in the various departments of science might be carried on in a manner which their noble institution seemed fitted to ensure.—*British Medical Journal*.

LORD LISTER AND THE NURSES' HOME.

The foundation stone of the Nurses' Home to be erected in connection with the Montreal General Hospital was laid by Lord Lister, Sept. 2nd. After he had performed the function he spoke of the interest with which he had listened to the president's remarks concerning the intimate relations that had existed between the General Hospital and the Medical School. Some people, he said, imagined that a hospital should be simply for the curing of disease, and that the teaching element was of small importance. There could not be a greater mistake, not only because the teaching practically of medicine was of vital importance, but because in direct proportion to the eminence and efficiency of a hospital school was the efficiency of the hospital. Where a hospital existed unconnected with a medical school, the tendency too often was that the medical officers, unstimulated by public criticism were apt to lapse into a condition of careless indifference, in spite of their success and of the importance of their noble calling. Where a great medical school was associated with a hospital there was perpetually upon those working in it the eye of public criticism, and the stimulus of emulation. He had the pleasure on the previous day of going through the hospital. Some parts of the old portions, no doubt, had lower ceilings than would be thought suitable at the present day; but what was wanted was not so much a very lofty ceiling as ample space between the beds. There might be an atmosphere extending to the sky, but if the beds were put close together, there would be insalubrity. In those wards of the hospital which had the lowest ceilings, the arrangement of the beds was such that there had been ensured ample provision of cubic space for the patients. He had been told that, excellent as the hospital was and had shown itself in the treatment of disease, there was not satisfactory accommodation for the nursing staff. Undoubtedly, it was of the utmost importance that there should be such accommodation as that home would provide. He touched on the women who acted as nurses when he was a student, and said that an immense improvement had taken place since then, thanks to the noble example and teaching of Florence Nightingale, and to the efforts of many others. When going through the hospital he had been asked to take stock of the nurses. He did so hastily, and, as far as he could judge, they were a healthy, able,

amiable and loyal staff. He was sure that in their new home the nurses would have accommodation commensurate with their value. Addressing himself more particularly to the nurses, he spoke of the extreme gratification that he experienced last year when being shown over one of the largest hospitals in Liverpool, by the nurses presenting him with an address, stating that his humble endeavours had done much in the way of alleviating the work of nurses. He was pleased to think that he had been in any way instrumental in this direction. He had been informed that the nursing staff did not confine their operations to the hospital, but that there was a liberal arrangement made by the hospital authorities by which the nurses might be sent out in the town generally; and where the circumstances of the family were such that they could not pay the nurse properly, the funds were contributed by the hospital to aid in the payment of the nurses. That seemed to him a most noble idea, and he could not but think that if it could be extended, not only to all parts of the city, but to the remote outlying parts of the country, it would be a most valuable thing for Canada. Her Excellency Lady Aberdeen had this matter much at heart, and he was sure that if her idea of the Victorian Order of Nurses could be carried out, with due regard to the efficient training of the nurses, and also to the efficiency of their supervision, the matter would commend itself to all medical men.—*The Gazette, Montreal.*

LORD LISTER AT THE BANQUET.

At the banquet of the British Medical Association, Thursday September, 2nd, an address was presented from the Dalhousie University, of Halifax, Nova Scotia, in which the Faculty congratulated his Lordship on his elevation to the Peerage, and assured him of the high regard in which he was held by the medical profession, not only in Halifax, but throughout all Canada.

Lord Lister, in replying, said he found it impossible to express his feelings at this additional token of regard from the medical profession. He confessed to being absolutely astonished at the repeated kindnesses shown him by his Canadian friends. He found on the address the name of one of his old house surgeons, Dr. John Stewart, of Halifax, and referred to him as "a man whom I not only admire, but, I may truly say, reverence." (Dr. Stewart had expected to meet Lord Lister in Montreal, but had been prevented on account of the very serious illness of his brother.)

At this banquet Lord Lister gives his last, or one of his last addresses in a public assemblage in Montreal. Long will those present

remember it. In many of our minds there will ever remain a picture of Faith Fenton's most loveable face of a most loveable man, modest and sympathetic, so deeply touched by the address presented by his medical friends from the maritime provinces, so powerfully affected by the sight of the name of one whom he loved—now sorely afflicted—that words ceased to come readily, and speech soon failed entirely. Such was the somewhat abrupt termination of Lister's farewell address, which was listened to with the closest attention, and caused moisture in many eyes.

LISTERISM.

WITHOUT discussing in detail the exact meaning of the word Listerism we will suppose that it includes the principles and practice of modern aseptic and anti-septic medicine in all its departments, although the term antiseptic surgery is probably the one most commonly used. Mr. Frederick Treves in his paper on "The Progress of Surgery" (*The Practitioner*) speaks as follows about Lister and his work :

"The great feature in Victorian surgery has, it is needless to say, been the introduction of the antiseptic method, and the great name which stands out above all others in the array of Victorian surgeons is the name of Lister.

"Lister created anew the ancient art of healing ; he made a reality of the hope which had for all time sustained the surgeon's endeavours ; he removed the impenetrable cloud which had stood for centuries between great principles and successful practice, and he rendered possible a treatment which had hitherto been but the vision of the dreamer. The nature of his discovery—like that of most great movements—was splendid in its simplicity and magnificent in its littleness. To the surgeon's craft it was but 'the one thing needful.' With it came the promise of a wondrous future ; without it was the hopelessness of an impotent past. It might well have been in Browning's mind when he wrote—

' Oh ! the little more and how much it is !

And the little less and what worlds away ! ' "

In publishing certain selected and original articles on the subject we will cull first from Lister's own writings and give a portion of his presidential address delivered last year before the British Association for the Advancement of Science, at Liverpool. Next will come an address in surgery, dealing especially with Lister's earlier work in pathology, showing how it prepared the way for the acceptance of the Germ Theory. Next will be an abstract, or rather selected portions, of Mr. Watson Cheyne's paper on "Wound Treatment during the Victorian Era." Then will follow three original communications in Surgery, Obstetrics and Medicine.

THE RELATIONS OF CLINICAL MEDICINE TO MODERN SCIENTIFIC DEVELOPMENT*

BY SIR JOSEPH LISTER, BART., D.C.L., LL.D., F.R.S.

PASTEUR'S RESEARCHES ON FERMENTATION.

My next illustration may be taken from the work of Pasteur on fermentation. The prevailing opinion regarding this class of phenomena when they first engaged his attention was that they were occasioned primarily by the oxygen of the air acting upon unstable animal or vegetable products, which, breaking up under its influence, communicated disturbance to other organic materials in their vicinity, and thus led to their decomposition. Cagniard-Latour had indeed shown several years before that yeast consists essentially of the cells of a microscopic fungus which grows as the sweetwort ferments; and he had attributed the breaking up of the sugar into alcohol and carbonic acid to the growth of the micro-organism. In Germany, Schwann, who independently discovered the yeast plant, had published very striking experiments in support of analogous ideas regarding the putrefaction of meat. Such views had also found other advocates, but they had become utterly discredited, largely through the great authority of Liebig, who bitterly opposed them.

Pasteur, having been appointed as a young man the Dean of the Faculty of Sciences in the University of Lille, a town where the products of alcoholic fermentation were staple articles of manufacture, determined to study that process thoroughly, and as a result he became firmly convinced of the correctness of Cagniard-Latours' views regarding it. In the case of other fermentations, however, nothing favorably comparable to the fermentation of yeast had till then been observed. This was now done by Pasteur for that fermentation in which sugar is resolved into lactic acid. This lactic fermentation was at that time brought about by adding some animal substance, such as fibrin, to a solution of sugar, together with chalk that should

*Portion of Presidential Address delivered before the British Association for the Advancement of Science at Liverpool, 1896.

combine with the acid as it was formed. Pasteur saw, what had never before been noticed, that a fine grey deposit was formed, differing little in appearance from the decomposing fibrin, but steadily increasing as the fermentation proceeded. Struck by the analogy presented by the increasing deposit to the growth of yeast in sweet-wort, he examined it with the microscope, and found it to consist of minute particles of uniform size. Pasteur was not a biologist, but although these particles were of extreme minuteness in comparison with the constituents of the yeast plant, he felt convinced that they were of an analogous nature—the cells of a tiny microscopic fungus. This he regarded as the essential ferment, the fibrin or other so-called ferment serving, as he believed, merely the purpose of supplying to the growing plant certain chemical ingredients not contained in the sugar but essential to its nutrition. And the correctness of this view he confirmed in a very striking manner, by doing away with the fibrin or other animal material altogether, and substituting for it mineral salts containing the requisite chemical elements. A trace of the grey deposits being applied to a solution of sugar containing these salts in addition to the chalk, a brisker lactic fermentation ensued than could be procured in the ordinary way.

I have referred to this research in some detail because it illustrates Pasteur's acuteness as an observer and his ingenuity in experiment, as well as his almost intuitive perception of truth.

A series of other beautiful investigations followed, clearly proving that all true fermentations, including putrefaction, are caused by the growth of micro-organisms.

THE CONTROVERSY AS TO SPONTANEOUS GENERATION OF MICROBES.

It was natural that Pasteur should desire to know how the microbes, which he showed to be the essential causes of the various fermentations, took their origin. It was at that period a prevalent notion, even among many eminent naturalists, that such humble and minute beings originated *de novo* in decomposing organic substances; the doctrine of spontaneous generation, which had been chased successively from various positions which it once occupied among creatures visible to the naked eye, having taken its last refuge where the objects of study were of such minuteness that their habits and history were correspondingly difficult to trace. Here again Pasteur at once saw, as if by instinct, on which side the truth lay, and, perceiving its immense importance, he threw himself with ardour into its demonstration. I may describe briefly one class of experiments which he performed with this object. He charged a series of

narrow-necked glass flasks with a decoction of yeast, a liquid peculiarly liable to alteration on exposure to the air. Having boiled the liquid in each flask to kill any living germ it might contain, he sealed its neck with a blowpipe during ebullition, after which, the flask being allowed to cool, the steam within it condensed, leaving a vacuum above the liquid. If, then, the neck of the flask were broken in any locality, the air at that particular place would rush in to fill the vacuum, carrying with it any living microbes that might be floating in it. The neck of the flask having been again sealed, any germs so introduced would in due time manifest their presence by developing in the clear liquid. When any of such a series of flasks were opened and re-sealed in an inhabited room, or under the trees of a forest, multitudes of minute living forms made their appearance in them ; but if this was done in a cellar long unused, where the suspended organisms, like other dust, might be expected to have all fallen to the ground, the decoction remained perfectly clear and unaltered. The oxygen and other gaseous constituents of the atmosphere were thus shown to be of themselves incapable of inducing any organic development in yeast water.

Such is a sample of the many well-devised experiments by which he carried to most minds the conviction that, as he expressed it, "*la génération spontanée est une chimère*," and that the humblest and minutest living organisms can only originate by parentage from beings like themselves.

Pasteur pointed out the enormous importance of these humble organisms in the economy of nature. It is by their agency that the dead bodies of plants and animals are resolved into simpler compounds fitted for assimilation by new living forms. Without their aid they would be, as Pasteur expresses it, *encombré de cadavres*. They are essential, not only to our well-being, but to our very existence. Similar microbes must have discharged the same necessary function of removing refuse and providing food for successive generations of plants and animals during the past periods of the world's history ; and it is interesting to think that organisms as simple as can well be conceived to have existed when life first appeared upon our globe have, in all probability, propagated the same lowly but most useful offspring during the ages of geological time.

THE INFLUENCE OF PASTEUR'S RESEARCHES ON SURGERY.

Pasteur's labours on fermentation have had a very important influence upon surgery. I have been often asked to speak on my share in this matter before a public audience ; but I have hitherto

refused to do so, partly because the details are so entirely technical, but chiefly because I have felt an invincible repugnance to what might seem to savour of self-advertisement. The latter objection now no longer exists, since advancing years have indicated that it is right for me to leave to younger men the practice of my dearly loved profession. And it will perhaps be expected that, if I can make myself intelligible, I should say something upon the subject on the present occasion.

Nothing was formerly more striking in surgical experience than the difference in the behaviour of injuries according to whether the skin was implicated or not. Thus if the bones of the leg were broken and the skin remained intact, the surgeon applied the necessary apparatus without any other anxiety than that of maintaining a good position of the fragments, although the internal injury to bones and soft parts might be very severe. If, on the other hand, a wound of the skin was present communicating with the broken bones, although the damage might be in other respects comparatively slight, the compound fracture, as it was termed, was one of the most dangerous accidents that could happen. Mr. Syme, who was, I believe, the safest surgeon of his time, once told me that he was inclined to think that it would be, on the whole, better if all compound fractures of the leg were subjected to amputation, without any attempt to save the limb. What was the cause of this astonishing difference? It was clearly in some way due to the exposure of the injured parts to the external world. One obvious effect of such exposure was indicated by the odour of the discharge, which showed that the blood in the wound had undergone putrefactive change by which the bland nutrient liquid had been converted into highly irritating and poisonous substances. I have seen a man with compound fracture of the leg die within two days of the accident, as plainly poisoned by the products of putrefaction as if he had taken a fatal dose of some potent toxic drug.

An external wound of the soft parts might be healed in one of two ways. If its surfaces were clean cut, and could be brought into accurate apposition it might unite rapidly and painlessly "by the first intention." This, however, was exceptional. Too often the surgeon's efforts to obtain primary union were frustrated; the wound inflamed, and the retentive stitches had to be removed, allowing it to gape; and then, as if it had been left open from the first, healing had to be effected in the other way which it is necessary for me briefly to describe. An exposed raw surface became covered in the first instance with a layer of clotted blood, or certain

of its constituents, which invariably putrefied ; and the irritation of the sensitive tissues by the putrid products appeared to me to account sufficiently for the inflammation which always occurred in and around an open wound during the three or four days which elapsed before what were termed "granulations" had been produced. These constituted a coarsely granular coating of very imperfect or embryonic structure, destitute of sensory nerves and prone to throw off matter or pus, rather than absorb, as freshly divided tissues do, the products of putrefactions. The granulations thus formed a beautiful living plaster, which protected the sensitive parts beneath from irritation, and the system generally from poisoning and consequent febrile disturbance. The granulations had other useful properties, of which I may mention their tendency to shrink as they grew, thus gradually reducing the dimensions of the sore. Meanwhile, another cause of diminution was in operation. The cells of the epidermis or scarf-skin of the cutaneous margins were perpetually producing a crop of young cells of similar nature, which gradually spread over the granulations till they covered them entirely and a complete cicatrix or scar was the result. Such was the other mode of healing, that by granulation and cicatrisation ; a process which, when it proceeded unchecked to its completion, commanded our profound admiration. It was, however, essentially tedious compared with primary union, while, as we have seen, it was always preceded by more or less inflammation and fever, sometimes very serious in their effects. It was also liable to unforeseen interruptions. The sore might become larger instead of smaller, cicatrisation giving place to ulceration in one of its various forms, or even to the frightful destruction of tissue which, from the circumstance that it was most frequently met with in hospitals, was termed hospital gangrene. Other serious and often fatal complications might arise, which the surgeon could only regard as untoward accidents, and over which he had no efficient control.

It will be readily understood from the above description that the inflammation which so often frustrated the surgeon's endeavours after primary union was in my opinion essentially due to decomposition of blood within the wound.

THE ANTISEPTIC SYSTEM OF SURGERY.

These and many other considerations had long impressed me with the greatness of the evils of putrefaction in surgery. I had done my best to mitigate it by scrupulous ordinary cleanliness and the use of various deodorant lotions. But to prevent it altogether

appeared hopeless while we believed with Liebig that its primary cause was the atmospheric oxygen which, in accordance with the researches of Graham, could not fail to be perpetually diffused through the porous dressings which were used to absorb the blood discharges from the wound. But when Pasteur had shown that putrefaction was a fermentation caused by the growth of microbes, and that these could not arise *de novo* in the decomposable substance, the problem assumed a more hopeful aspect. If the wound could be treated with some substance which, without doing too serious mischief to the human tissues, would kill the microbes already contained in it, and prevent the future access of others in the living state, putrefaction might be prevented, however freely the air with its oxygen might enter. I had heard of carbolic acid as having a remarkable deodorizing effect upon sewerage, and having obtained from my colleague, Dr. Anderson, Professor of Chemistry in the University of Glasgow, a sample which he had of this product, then little more than a chemical curiosity in Scotland, I determined to try it in compound fractures. Applying it undiluted to the wound, with an arrangement for its frequent renewal, I had the joy of seeing these formidable injuries follow the same safe and tranquil course as simple fractures, in which the skin remains unbroken.

At the same time we had the intense interest of observing in open wounds what had previously been hidden from human view, the manner in which the subcutaneous injuries are repaired. Of special interest was the process by which portions of tissues killed by the violence of the accident were disposed of, as contrasted with what had till then been invariably witnessed. Dead parts had been always seen to be gradually separated from the living by an inflammatory process and thrown off as sloughs. But when protected by the antiseptic dressing from becoming putrid and therefore irritating, a structure deprived of its life caused no disturbance in its vicinity, and, on the contrary, being of a nutritious nature, it served as pabulum for the growing elements of the neighbouring living structures, and these became in due time entirely substituted for it. Even dead bone was seen to be thus replaced by living osseous tissue.

This suggested the idea of using threads of dead animal tissue for tying blood vessels; and this was realized by means of catgut, which is made from the intestines of the sheep. If deprived of living microbes, and otherwise properly prepared, catgut answers the purpose completely, the knot holding securely, while the ligature around the vessel becomes gradually absorbed and replaced by a ring of living tissue. The threads, instead of being left long as before

could now be cut short, and the tedious process of separation of the ligature, with its attendant serious danger of bleeding, was avoided.

Undiluted carbolic acid is a powerful caustic, and, although it might be employed in compound fracture where some loss of tissue was of little moment in comparison with the tremendous danger to be averted, it was altogether unsuitable for wounds made by the surgeon. It soon appeared, however, that the acid would answer the purpose aimed at, though used in diluted forms devoid of caustic action, and therefore applicable to operative surgery. According to our then existing knowledge, two essential points had to be aimed at—to conduct the operation so that on its completion the wound should contain no living microbes, and to apply a dressing capable of preventing the access of other living organisms till the time should have arrived for changing it.

Carbolic acid lent itself well to both these objects. Our experience with this agent brought out what was, I believe, a new principle in pharmacology—namely, that the energy of action of any substance upon the human tissues depends not only upon the proportion in which it is contained in the material used as a vehicle for its administration, but also upon the degree of tenacity with which it is held by its solvent. Water dissolves carbolic acid sparingly and holds it extremely lightly, leaving it free to act energetically on other things for which it has greater affinity, while various organic substances absorb it greedily and hold it tenaciously. Hence its watery solution seemed admirably suited for a detergent lotion to be used during the operation for destroying any microbes that might fall upon the wound, and for purifying the surrounding skin and also the surgeon's hands and instruments. For the last named purpose it had the further advantage that it did not act on steel.

For an external dressing the watery solution was not adapted, as it soon lost the acid it contained, and was irritating while it lasted. For this purpose some organic substances were found, to answer well. Large proportions of the acid could be blended with them in so bland a form as to be unirritating; and such mixtures, while perpetually giving off enough of the volatile salt to prevent organic development in the discharges that flowed past them, served as a reliable store of the antiseptic for days together.

ATMOSPHERIC DUST.

The appliances which I first used for carrying out the antiseptic principle were both rude and needlessly complicated. The years that have since passed have witnessed great improvements in

both respects. Of the various materials which have been employed by myself and others and their modes of application I need say nothing, except to express my belief, as a matter of long experience, that carbolic acid, by virtue of its powerful affinity for the epidermis and oily matters associated with it, and also its great penetrating power, is still the best agent at our disposal for purifying the skin around the wound. But I must say a few words regarding a most important simplification of our procedure. Pasteur, as we have seen, had shown that the air of every inhabited room teems with microbes ; and for a long time I employed various more or less elaborate precautions against the living atmospheric dust, not doubting that, as all wounds except the few which healed completely by the first intention underwent putrefactive fermentation, the blood must be a peculiarly favorable soil for the growth of putrefactive microbes. But I afterwards learned that such was by no means the case. I had performed many experiments in confirmation of Pasteur's germ theory—not, indeed, in order to satisfy myself of its truth, but in the hope of convincing others. I had observed that uncontaminated milk, which would remain unaltered for an indefinite time, if protected from dust, was made to teem with microbes of different kinds by a very brief exposure to the atmosphere, and that the same effect was produced by the addition of a drop of ordinary water. But when I came to experiment with blood drawn with antiseptic precautions into sterilized vessels, I saw to my surprise that it might remain free from microbes in spite of similar access of air or treatment with water. I even found that if very putrid blood was largely diluted with sterilized water, so as to diffuse its microbes widely and wash them of their acrid products, a drop of such dilution added to pure blood might leave it unchanged for days at the temperature of the body, although a trace of the septic liquid undiluted caused intense putrefaction within twenty-four hours. Hence I was led to conclude that it was the grosser forms of septic mischief, rather than microbes in the attenuated condition in which they existed in the atmosphere, that we had to dread in surgical practice. And at the London Medical Congress in 1881, I hinted, when describing the experiments I have alluded to, that it might turn out possible to disregard altogether the atmospheric dust. But greatly as I should have rejoiced at such a simplification of our procedure, if justifiable, I did not then venture to test it in practice. I knew that with the safeguards which we then employed I could ensure the safety of my patients, and I did not dare to imperil it by relaxing them. There is one golden rule for all experiments upon

our fellow men. Let the thing tried be that which, according to our best judgment, is the most likely to promote the welfare of the patient. In other words, Do as you would be done by. Nine years later, however, at the Berlin Congress in 1890, I was able to bring forward what was, I believe, absolute demonstration of the harmlessness of the atmospheric dust in surgical operations. This conclusion has been justified by subsequent experience; the irritation of the wound by antiseptic irrigation and washing may, therefore, now be avoided, and Nature left quite undisturbed to carry out her best methods of repair, while the surgeon may conduct his operations as simply as in former days, provided always that, deeply impressed with the tremendous importance of his object, and inspiring the same conviction in all his assistants, he vigilantly maintains from first to last, with a care that, once learnt, becomes instinctive, but for the want of which nothing else can compensate, the use of the simple means which will suffice to exclude from the wound the coarser forms of septic impurity.

THE EFFECT OF THE ANTISEPTIC SYSTEM ON HOSPITAL STATISTICS.

Even our earlier and ruder methods of carrying out the antiseptic principle soon produced a wonderful change in my surgical wards in the Glasgow Royal Infirmary, which, from being some of the most unhealthy in the kingdom, became, as I believe I may say without exaggeration, the healthiest in the world; while other wards, separated from mine only by a passage a few feet broad, where former modes of treatment were for a while continued, retained their former insalubrity. This result, I need hardly remark, was not in any degree due to special skill on my part, but simply to the strenuous endeavour to carry out strictly what seemed to me a principle of supreme importance.

Equally striking changes were afterwards witnessed in other institutions. Of these I may give one example. In the great Allgemeines Krankenhaus of Munich, hospital gangrene became more and more rife from year to year, till at length the frightful condition was reached that 80 per cent. of all wounds became affected by it. It is only just to the memory of Professor von Nussbaum, then the head of that establishment, to say that he had done his utmost to check this frightful scourge; and that the evil was not caused by anything peculiar in his management was shown by the fact that in a private hospital under his care there was no unusual unhealthiness. The larger institution seemed to have become hopelessly infected

and the city authorities were contemplating its demolition and reconstruction. Under these circumstances, Professor von Nussbaum despatched his chief assistant, Dr. Lindpaintner, to Edinburgh, where I at that time occupied the chair of clinical surgery, to learn the details of the antiseptic system as we then practised it. He remained until he had entirely mastered them, and after his return all the cases were on a certain day dressed on our plan. From that day forward not a single case of hospital gangrene occurred in the Krankenhaus. The fearful disease pyæmia disappeared, and erysipelas soon followed its example.

THE EXTENSION OF THE FIELD OF SURGERY.

But it was by no means only in removing the unhealthiness of hospitals that the antiseptic system showed its benefits. Inflammation being suppressed, with attendant fever, pain, and wasting discharge, the sufferings of the patient were, of course, immensely lessened; rapid primary union being now the rule, convalescence was correspondingly curtailed; while as regards safety and the essential nature of the mode of repair, it became a matter of indifference whether the wound had clean cut surfaces which could be closely approximated or whether the injury inflicted had been such as to cause destruction of tissue. And operations which had been regarded from time immemorial as unjustifiable were adopted with complete safety.

It pleases me to think that there is an ever-increasing number of practitioners throughout the world to whom this will not appear the language of exaggeration. There are cases in which, from the situation of the part concerned or other unusual circumstances, it is impossible to carry out the antiseptic system completely. These, however, are quite exceptional; and even in them much has been done to mitigate the evil which cannot be altogether avoided.

I ask your indulgence if I have seemed to dwell too long upon matters in which I have been personally concerned.—*British Medical Journal*, Sept. 19, 1896.

ADDRESS IN SURGERY.*

BY JOHN STEWART, M.B. EDIN.
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IN considering this era of many books when in our own territory the intellectual atmosphere is really obscured by the perpetual precipitation of what we are pleased so call literary matter, one is struck by the fact that the man who has done the most important work of the era, the man whose work is the inspiration of a large part of this surgical literature, has never written a book. The published writings of Sir Joseph Lister exist only in scattered papers in the pages of various medical and scientific journals. They might all be collected in one small octavo volume. But I will venture to say that octavo volume would contain more of the marrow of surgery than many bulky treatises. It would indeed, I believe, be found to throw a clearer light on the great problems of medical science in general, than any single volume that can be named.

The enormous practical importance of the work Lister has done in establishing antiseptic surgery has, I cannot help thinking, overshadowed to some extent the equally great importance of his earlier work on pathology. Equal importance, I say advisedly, for the pathological principles acquired in his earlier work prepared the way for the acceptance of the germ theory and gave it a rational basis to work on. A practice founded on isolated data, a purely empirical practice with no definite homogeneous pathological groundwork, must be unsatisfactory, unmanageable, even at times dangerous. One cannot have a better example of this than the history of venesection.

It is my purpose in this short paper to draw attention to some of the cardinal points in the teaching of Lister. And first I shall speak of his work on the essential nature of inflammation, as I consider it gives the key-note of all his teaching. It would be impossible to overestimate the importance of these researches. They occupied him for several years, and the results are published in the Trans-

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actions of the Royal Society for 1858. They may be called the *Principia of Surgical Pathology*. This work removed many erroneous impressions as to the nature of the inflammatory process; it proved the correctness of many of the surmises arrived at by the marvellous genius of John Hunter, but replaced his definition of inflammation by an entirely different one, and gave us a new idea of the subject. And some of the most interesting facts in physiology and pathology were for the first time discovered and demonstrated.

At the time when he began his work the question of the nature of inflammation was in a most unsettled condition. All sorts of theories were held about it, and there was little but theory. But the subject was being eagerly investigated. Many influences, a consideration of which may not detain us now, had combined to awaken a spirit of research into vital phenomena, and experimental pathology and microscopic analysis were being brought to bear on what may truly be called this burning question. The web of the frog's foot and the membranous wing of the bat were, on account of their transparency, the favorite subjects of study.

It was well known that the application of an irritant to the web of the frog's foot resulted in changes of the calibre of the blood vessels and the abnormal accumulation in them of blood corpuscles. Lister set himself to discover whether these phenomena were related to each other as cause and effect. The Astley Cooper prize had just been awarded to Wharton Jones for an essay in which he contended that the stagnation of the blood was due to a contraction of the arteries. It occurred to Lister that if a mild irritant were employed one might get "the alteration in the blood vessels without the concomitant alteration in the blood," and he experimented with warm water. As a result of his experiments he arrived at the conclusion that "the arteries regulate by their contractility the amount of blood transmitted in a given time through the capillaries, but neither full dilatation, extreme constriction, nor any intermediate state is capable *per se* of producing accumulation of corpuscles in the latter." His next step was by a series of most ingenious experiments, which it is impossible to describe in the limits of this paper, to establish the fact that inflammation "may be brought about in two totally distinct ways, viz., either by the direct operation of a noxious agent upon the tissues or indirectly through the medium of the nervous system."

Then, from study of the phenomena observed in the affected tissue he arrived at an explanation of the essential changes underlying these phenomena. As this was the earliest exposition of the modern doctrine of inflammation we may consider it in some detail.

A strong inference may be drawn from the following experiment. A frog was placed in a jar of water strongly charged with carbonic acid. When the limbs had ceased to act it was withdrawn. It was found though the heart was still beating, the blood-vessels were loaded with stagnating blood. After a time the frog regained consciousness and resolution occurred in the vessels. We may infer that the carbonic acid, poisoning the web as well as the brain, paralyses for a time the functional activity of both, and that the return of circulation like the recovery of cerebral functions, depends on the restoration of the dormant faculties of the affected tissues. The same conclusions are present in cases of galvanic shock.

Then the condition of the blood corpuscles in the inflamed part is suggestive. In healthy frog's blood the corpuscles have no tendency to adhere; in the inflamed web they adhere to each other and to the wall of the vessel as they do in shed blood. If the blood, then, passing through the vessels of an inflamed part behaves as it does when let out of the body and in contact with dead matter, the inference is, that the tissues of this part are more like dead matter than living—that their vitality is at a low ebb. A consideration also of the nature of the agents acting as irritants would lead to the same conclusions. All of these irritants, chemical, thermal, mechanical, electrical, are such, that if supplied sufficiently strongly, or for a long enough time, they will kill the tissues.

But direct evidence on the question was obtained from an unexpected quarter. While examining a frog's web, in which he had induced inflammation by a grain of mustard, Lister observed, to his astonishment, that, in addition to the usual appearances of inflammation in the irritated part, the pigment cells in this area had a totally different appearance from what they had elsewhere. This observation opened up a new path for investigation and led to most important results. It had long been known that changes occurred in the colour of the frog similar to, though not so marked as, those of the chameleon. It was also known that the pigment was situated in certain cells of the skin, and German investigators had concluded that the changes in shade from light to dark were caused by contractile changes in the protoplasm of these chromatophorous cells. But Lister showed that the change was not due to a change of shape in the cell but to variations in the distribution of the pigment. He showed that the cells were branching cells, the process of which subdivided and anastomosed so as to form a reticular meshwork in the skin. When the skin of the frog is pale the pigment granules are aggregated in a small black mass around

the nucleus, the branches of the cell being seen with difficulty. Where the skin is dark, the pigment granules are scattered throughout the protoplasm, being more closely packed in the smaller branches, until finally they come in contact and give the appearance of fine dark lines. And there are intermediate conditions corresponding to the hue of the frog. If the frog is exposed to light, it becomes pale, if secluded from the light, it becomes dark. How is the change brought about? Is it a direct action of sunlight on the skin, or is it reflex, through the eye? Lister decided this in a simple way, he blindfolded the frog, made a little hood or jacket for it, leaving only an opening for air, and now found that, whether exposed to light or not, the dark color was permanent. This proved that the movement, or, at least the concentration of pigment, was a reflex change through the eye and similar to the contraction of the pupil. Before this experiment, there was no evidence that any function but that of muscular contraction was under the influence of the nervous system. Further experiment showed that the spinal cord held the same relation to the concentration of the pigment granules as to the contractility of the arterial musculature. Division of the sciatic nerve, or of the spinal cord was followed, in one case, by relaxation of the arteries; in the other, by diffusion of the pigment granules and the corresponding darkening of the skin. But in time, contractility and concentration returned. Transverse segments could be removed from the spinal cord with the same result. After a longer or shorter time, there was a restoration of the suspended function. But when the whole spinal cord had been cut away the nervous control of these functions was lost and permanent relaxation and diffusion resulted.

And the direct action of the irritant on the pigment cells was shown to be distinctly of the nature of a paralysis or arrest of function. In the inflamed spot on the frog's web, the pigment is in an immovable condition. If a frog of medium color has been the subject of experiment, and if we place it in a white basin and expose it to light it soon becomes pale, but the irritated spot remains dark. If, on the other hand, we cover it in a jar and exclude it from light it becomes dark, but the irritated spot appears pale by contrast. Power of concentration, as well as power of diffusion is lost.

The same results were obtained when the experiment was varied by acting on a portion of the web entirely removed from the foot so that the influence of the nervous and circulatory systems were eliminated. This is absolute evidence that this particular form of tissue loses its power of action when an irritant has acted sufficiently

long upon it. It has not been destroyed; after a time its power returns. If the irritant has been too powerful or continued for too long a time, the tissue may lose its properties permanently : it may die.

Similar results were also obtained in a series of most interesting experiments upon ciliated cells.

And so, from the behaviour of the blood in an irritated, that is, an inflamed part, from a consideration of the nature of irritants, and of the behaviour of the tissues when irritated, "we are drawn to the inevitable inference that the occurrence of inflammatory congestion in a part, indicates an enfeebled state of the tissues bordering more or less closely on death, and if continued leads to death."

These experiments showed that the phenomena of inflammation could be induced in tissues entirely cut off from the influence of the nervous or circulatory system. This is proof that the tissues possessed life in themselves. Again when the irritation was removed, inflammation passed off, therefore the tissues possessed inherent powers of recovery. This idea of inherent vitality of the cell, the self preserving power of the tissues, is a favorite one in Lister's teaching. One of his earliest contributions to surgical literature is a note of a case in which, on account of secondary hæmorrhage, a tourniquet had been applied to the arm so as completely to stop the circulation in it, and had so remained for thirty hours before he was called in to amputate. The arm was of course swollen, cold, and discolored, but encouraged by the results of the observations he was then carrying out on this subject of the vitality of the tissues, he decided to tie the brachial and give the arm a chance, and with complete success.

And blood is a tissue in which the phenomena of depressed function and renewed vigor may be seen, and which has an inherent power of resisting noxious agents. And this not only in its fluid state. Coagulation does not necessarily imply death of the blood. Lister showed in a series of most remarkable experiments that blood in its normal condition has no tendency to coagulate. In most text-books of physiology Brucke's theory of coagulation is adopted, namely, that coagulation is prevented by the peculiar action of the blood vessels. But we cannot prevent a tendency unless the tendency be there to prevent. The vascular parietes exert no special action on the blood, they simply continue to live and to hold their normal relations to the blood. We have as much right to say that the blood exerts a peculiar influence on the walls of the blood vessels to prevent their degenerating. What is it that induces coagulation?

Contact with dead, or rather with non-living solid matter. Now take the case of a wounded vein. There is, of necessity, a clot in the wound. But this clot does not extend, the blood flowing over it does not coagulate upon it, the blood-clot does not induce coagulation, therefore it is the living tissue. Later on, when antiseptic surgery enabled him to study the whole subject under new conditions, Lister was able to prove the truth of theories he had been led to form as to the behaviour of the blood-clot in a wound. I find in some text-books references to Schede's method of utilizing blood-clot in wounds and, if I mistake not, I have read of Halstead's blood-clot, but I do not find that blood-clot behaves differently in Hamburg or Baltimore from what it did in the Royal Infirmary of Edinburgh a quarter of a century ago, when one of Lister's favourite demonstrations was the vascularisation of blood-clot and epithelial growth upon it. Some of you will remember Hunter's famous case in which he believed organization had taken place in a blood-clot in the tunica vaginalis.

These principles explained healing by first intention. The tissues, irritated by the passage of the knife, present the early stages of inflammation, dilatation of vessels, stasis of blood, effusion of liquor sanguinis and corpuscles which glue the sides of the wound together and in which organization at once sets in. In such a wound, it may be that none of the cardinal signs of inflammation show themselves. And the germ theory explained the too frequent failure of this method of union. The initial cause of irritation had passed away, but septic germs had gained access to the wound and led to a persistent irritation, directly, by their poisonous action on the tissues; indirectly causing reflex irritation through the nervous system.

In the same way granulation tissue was shown to have no tendency to suppurate unless irritated. The bearing of this upon the treatment of ulcer is evident. Remove the irritation and the tendency to suppuration ceases. When granulations are covered over by epithelium, their structure is not changed, but external agencies are excluded and no more pus is formed. Also, when two granulating surfaces are brought together they cease to form pus. Each protects the other from irritation. Then, too, when antiseptic surgery began, it was shown that some antiseptic agent was necessary to purify the skin, the hands, the instruments, Lister showed that the less the antiseptic, with its unavoidable irritation, acted on the wound, the better. Twenty-five years ago, when the most extravagant ideas were abroad as to antiseptic treatment, when wounds

were being pickled in antiseptics, the abscess cavities were being over distended with carbolic acid, these were Lister's words : "The injured tissues do not need to be stimulated or treated with any 'mysterious 'specific' ; ALL THAT THEY NEED IS TO BE LET ALONE. Nature will then take care of them ; those which are weakened will recover and those which have been deprived of vitality by the injury, will serve as pabulum for their living neighbours." This is the watch-word of Lister's whole system of treatment. Remove the obstacle to healing ; relieve irritation ; assist Nature. The most potent and frequent hindrance to the healing process was septic infection, and naturally engrossed the largest amount of attention, but this principle underlies Lister's work in all directions.

In the quotation just given, we have the first indication of a new principle : "pabulum for their living neighbours." That which struck Lister most in the study of granulation tissue under the new conditions of antiseptic surgery was its power of absorbing dead tissue as sloughs and necrosed bone. It was generally supposed that matter had to be in a state of solution before it could be absorbed. Lister showed this was not necessary. He pointed out that the granulations ate the dead bone, "nibbling" was the word he used in describing the process. And this observation led to the successful reintroduction of animal ligature. Many of these observations, for example, the specific action of living tissues, the germicidal action of the blood, and even of the white corpuscles, and this "nibbling" of dead substances by the cells of granulation tissue, were forerunners of the modern doctrine of phagocytosis. Lister laid stress on the fact that a granulating surface was a non-absorbing surface, and that a wound was safer from infection when once covered by granulations, and spoke of the granulating surface as a "living plaster," or protective. Metchnikoff's theory explains this by assuming that the amœboid cells of the granulating surface are capable of coping with the micro-organisms which find their way to it.

We can see that the trend of Lister's thought was much influenced by the teaching of John Hunter. To one of these lines of thought I will now refer, and that is the influence of the nervous system in pathological processes, what Hunter spoke of as "sympathy." We have just seen the importance which Lister attached to the action of the nervous system in inflammation. While he proved that inflammation might occur independently of the central nervous system, he held that in ordinary circumstances it played

a very important part in the process, and he believed with Hunter, that in such events as pneumonia, following upon chill, or the sudden congestion occurring in the kidneys after the passing of a bougie into the bladder, we had proofs of inflammation brought about reflexly through the nervous system.

Hunter pointed to the good effects of bleeding from the temples in iritis, and similar things as an example of this sympathy, or what he sometimes called "textural contiguity." He also pointed to the general contraction of the arteries occurring in venesection. And Lister observed that the reduction of pressure in the veins resulting from the action of gravity, as in an elevated arm, led to reflex contraction of the arteries and local anæmia, and long before Esmarch described his bloodless method, Lister had turned this observation to advantage, and by simply elevating the limb and then applying a tourniquet, secured absolute anæmia, in the part to be operated upon.

Early in the history of antiseptic surgery, Lister, in treating of suppuration, considered it due to two causes, that is, that the abnormal stimulus of the tissues which led to suppuration might be excited through the action of the nervous system, or the direct action of stimulating salts, and sub-divided the latter into putrefactive stimulation from bacterial products and the irritative action of antiseptics themselves. This was before Ogston's work, and when the science of bacteriology was in its infancy. It would appear now that the aphorism of Weigert must hold, and that without micro-organisms we can have no suppuration. But the question has two sides, there is the soil and the seed, and the deterioration of tissue which makes it a fit soil for the growth of germs may be brought about by altered nervous action. But if this doctrine of suppuration is pushed further, and all inflammation, as some pathologists would have us believe, is micro-organismal, if this is the orthodox faith I cheerfully confess myself a heretic, for I cannot understand why the products of bacterial life should have a monopoly of inflammatory power.

One of Lister's favorite instances of this action of the nervous system was the practice of counter-irritation, whether by blisters or in acupuncture, or in the use of the actual cautery. It has been said in the light of modern pathology counter-irritation is an exploded theory and an obsolete practice. I should be sorry to think so. Counter-irritation, like venesection, may have been unwisely used, but the fact remains that it is one of our most powerful and trustworthy methods of treatment.

As much as twenty years ago it was Lister's practice, in early cases of gelatinous degeneration of the knee-joint, with perhaps effusion, to make free incisions through the infiltrated tissues into the joint, and this was in a certain proportion of cases followed by very satisfactory results. We know now that this disease was tuberculous, an infective inflammation. I believe the explanation of these cures to be that partly as a result of the relief of tension, partly as a consequence of the counter-irritation caused by the open wounds, reflex nutritional changes were set up which improved the vitality of the tissues and enabled them to cope with the tubercle bacilli.

Gentlemen, I have perhaps tried to cover too much ground in the time at my disposal. But there are two or three things suggested by this survey of Lister's doctrines to which I would like to draw attention. First, we see the supreme importance of a thorough training in the branches of knowledge on which scientific surgery is based. It was his training in chemistry and physics, and his remarkable, we may almost say unrivalled, skill in microscopic technique which enabled Lister to carry out these researches.

Again, I wish to point out that Lister's teaching is to a very great extent clinical and practical. There is not one of the principles which we have been considering which is not capable of demonstration at the bed-side, or, at least, for which strong inferences may not be drawn from the facts of our daily work.

Lastly, I must refer to the spirit in which Lister works. On the one hand, devotion to the good of his fellowmen, the best interests of the patients committed to his care ; on the other, a reverent attitude towards the Eternal Power who manifests Himself in these mysteries of life. It appears to me that in his habits of observation, his methods of study, and, fortunately for humanity, in the general result of his work, we have a fine illustration of the thought of an ancient Eastern poet who has said :

“ Devoutly look, and naught but wonders shall pass by thee,
Devoutly read, and then all books shall edify thee,
Devoutly speak, and men devoutly listen to thee,
Devoutly act, and then the strength of God acts through thee.”

—*Montreal Medical Journal*, September, 1896.

WOUND TREATMENT DURING THE VICTORIAN ERA.

BY W. WATSON CHEYNE, F.R.S.,

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THE advance of surgery during the Victorian era is one of the most striking facts of this age, and it is interesting to contrast the state of matters at the beginning of the Queen's reign with that at the present time. Let us compare the contents of a text-book on surgery published during the third decade with those of a text-book at the present time. Take, for example, Liston's "Elements of Surgery" or Lizars's "System of Practical Surgery." We find that they deal with inflammation and various inflammatory affections at considerable length, and with tumours, the treatment of ulcers, and various septic diseases. Hardly anything is said about the method of dressing wounds, certainly no prominent place is assigned to that subject. When we come to regional surgery we are struck by the entire absence of any reference to many diseases now known and included in the department of surgery, and to a variety of operations which are now of every-day occurrence. In speaking of the surgery of the abdomen, hernia is referred to at great length, ascites and ovarian disease are mentioned, and operations for ovarian or other abdominal tumours are condemned. There is no mention at all of intestinal surgery, while as to exploratory operations Liston says, in referring to attempts that had been made to remove abdominal tumors, that the majority of the patients who were dissected to see what part was affected perished within forty-eight hours, and that the repetition of any such incisions and gropings would be unpardonable. The surgical affections of the kidneys, gall bladder, and other abdominal organs were not so much as mentioned. Of the surgery of the bones and joints, which forms so large a part of our present operative work, there is the same cursory notice, for any attempt to operate on these parts was generally followed by very serious and often fatal consequences. The main part of the surgical text-books of that day is taken up in the description of amputations, in short notices

of one or two excisions, which are generally looked on as unsatisfactory operations, in elaborate descriptions of fractures and dislocations, ligature of arteries, hernia, and genito-urinary diseases, more especially stone. In fact, the operative surgery of that period consisted solely in procedures which could be done quickly and which were essential for the life of the patient. Operations of convenience, which form so large a part of surgical practice at the present day—that is to say, operations with the view of remedying deformities, removing unsightly swellings or scars, making a patient more comfortable or relieving him of a source of pain—were hardly ever mentioned, and certainly were very rarely practised.

If, on the other hand, we look at a surgical text-book of the present time we find details as to many operative measures in all parts of the body which were not referred to at all previously, and operations which, if thought of at all at the beginning of this era, were looked on as unwarrantable, are now commonly recommended. For example, we find that large portions of the text-books of the present day are occupied by discussions on abdominal surgery, including many and ingenious procedures affecting practically all the organs in the abdomen. We find, for example, that there is now a large field for renal surgery. One has only to read Professor Mayo Robson's lectures on the surgery of the gall bladder in the recent numbers of the *Lancet* to see what a variety of procedures have been devised for the relief of gall stones, and with what remarkable success these various procedures can be carried out. Exploratory operations also form an important point in the diagnosis of abdominal diseases, and where a patient is suffering, and where, from the general facts of the case, there seems a reasonable probability that the cause of his suffering is remediable by operation, one does not hesitate to open the abdomen with the view of ascertaining the nature and seat of the suffering, and of remedying it if possible. Nor is surgery any longer limited to operations which can be rapidly performed, and which are necessary to save life. All sorts of operations are now performed with the view of making the patient more comfortable, or even of making him more beautiful ; patients, in fact, are becoming discontented with any deviation from the normal, and themselves seek the surgeon's aid in remedying the defect. Numerous operations are performed on bones and joints which formerly were considered to be quite unjustifiable, deformities are remedied, fractures are wired or pegged if they will not come into proper position with apparatus, healthy joints are opened, and so on.

In spite of the active surgery of the present day, the mortality

after operations has almost entirely disappeared, more especially in the case of those performed for purposes of exploration and convenience. In my own practice the mortality in major operations does not exceed 2 to 3 per cent., and this is practically entirely made up of cases admitted almost moribund, such as advanced intestinal obstruction, and operated on *in extremis* with the faint hope that life may be saved. At the beginning of this era the mortality after operations which were done, even where a patient was not *in extremis*, was from 25 per cent. to 40 per cent., or even more, and the surgical ward of a hospital was one of the most depressing and nauseating sights; depressing because the patients were almost all ill, suffering pain from their festering wounds, and in a state of fever, while many were moribund from septic diseases; and nauseating from the stench from the putrefying wounds and dressings which poisoned the air. At the present day to go into a surgical ward is a pleasure. The patients are happy and cheerful, and it is very rarely that one is found who presents any signs of fever or illness; they are free from pain with rare exceptions, and the air is as pure and free from odour as the air in the gardens and parks outside.

What is it that has led to this wonderful change? How is it that the range of operative surgery has expanded to such an enormous degree? How is it that operations which were not thought of before, or if thought of were only looked on as chimeras, are now so successfully carried out? How is it that the patients remain free from fever and pain, and that the mortality has been reduced to such a marked extent?

If we consider the matter we see that the reasons why many of the operations of the present day were not formerly performed are threefold; firstly, they were too prolonged and painful for the patient to bear; secondly, many of them were too dangerous; and thirdly, in the case of many the surgeon at that time did not possess the necessary knowledge to enable him to decide what was the real root of the evil, and how it might best be remedied.

At that time pain was a very important element in considering the question of operation, and one of the great qualifications of a surgeon was rapidity and dexterity in operating; the greatest—at any rate, the best known and most highly reputed—surgeon was, in many cases, the man who could perform an operation in the fewest number of seconds, and not necessarily the man who had the best judgment or knowledge. Clearly an operation which would take from half an hour to two hours, or even longer in its performance,

such as extensive excision of tuberculous glands in the neck, excision of intestine with subsequent suture, prolonged operations on bones, and so forth, could not be thought of ; the patient would hardly have been alive by the time the operation was concluded.

Many of these operations also were too dangerous. Suppuration practically always occurred in the wounds ; it is true that healing by first intention occasionally took place to some extent, but hardly ever completely throughout the whole area of the wound. Ferguson, in 1842, writing on union by first intention, says : " It may be satisfactory for the young practitioner to know that when surgeons talk of union by first intention having occurred throughout the wound, such little troublesome points often remained " (referring especially to the points where the ligatures passed out) " which the most consummate skill will not cause to heal until nature seems inclined, and this will not be until the open part has gone through the process of suppuration and reached that of healthy granulation, when the sore will heal, as it were, spontaneously." Pyæmia, septicæmia, erysipelas, tetanus, and hospital gangrene were common sequelæ of wounds, and where veins, bones, serous cavities, joints, or the abdominal cavity, were involved in the operative procedures the occurrence of these septic diseases was so frequent, indeed almost constant, that after a few attempts operations of that kind were usually given up.

Again, want of knowledge prevented the employment of many surgical procedures in vogue at the present day ; want of knowledge, for example, of the whole subject of tuberculosis led to the adoption of methods of treatment of tuberculous diseases which are only employed at the present time for a comparatively short period of the case, if at all ; and our knowledge of the nature and mode of distribution and anatomy of these tuberculous affections enables us to check them by operative measures in a way which could not be done till this knowledge had been acquired. Similarly in the case of malignant disease. The strides which have of recent years been made in our knowledge of the mode of spread and extent of malignant disease as the result of the use of the microscope enable us to attack affections of this kind in a much more thorough manner than was formerly thought necessary, and with results of the most satisfactory character.

These three obstacles to the progress of operative surgery have been removed during the Victorian era by the discovery of anæsthesia, by the introduction of asepsis, and by the remarkable progress which has been made in surgical pathology.

It is interesting for the moment to consider which of these three

has exercised the most important influence on the rapid development of surgery. In the first place, however, it may be pointed out that they have all been necessary; that without all three, surgery could not be in its present position. Without anæsthesia we should still be unable to undertake extensive, severe, and prolonged operations, however safe as regards their ultimate result (supposing the patient to survive the shock), or however much we knew them to be necessary from our pathological knowledge. Without asepsis, the possibility of prolonging the operation would not help us at all; on the contrary, it would only lead to greater disasters, because the wound would be more certainly soiled; nor could the knowledge acquired from the study of surgical pathology be applied with safety. And again, without our knowledge of surgical pathology—although, no doubt, many advances could have been made, for example, with regard to operations for deformities—the present advances could not have been attained, because we should not have known what to do. Taking the two examples which we have already mentioned, tuberculosis and cancer, without the knowledge gained by surgical pathology, our results and our procedures would be practically as inefficient as ever they were.

Although these three great advances are essential one to the other, the greatest of them and the most essential is the discovery of asepsis. If we look at the surgical text-books up to the period of the introduction of asepsis, we do not find any very marked advances in surgical procedures during the twenty years which elapsed after the discovery of anæsthetics. We still find, for example, in the case of the abdomen that there is no mention of renal surgery, of gall-bladder surgery, or of intestinal surgery, though it is true that, by the time asepsis had been begun, abdominal surgery was beginning to make considerable progress, chiefly through the efforts of Spencer Wells, and especially in the direction of the removal of ovarian tumours. We still find that operations on varicose veins, for example, are just as dangerous and just as much decried as they were before. Thus Gross in his text-book of surgery considers only two methods justifiable in treating varix—namely, subcutaneous ligature and the caustic tissue—and he speaks of the great dangers of such operations. We find similarly that little or no progress had been made in bone or joint surgery. It is true that in speaking of exostoses Gross says that they may be removed by operation, and he says also that operation may yield satisfactory results, but he adds: “as it is, there will, in any event, be more or less suppuration retarding the progress of the case, and the patient may congratulate

himself if he escapes erysipelas and other serious consequences." In the treatment of spinal abscess, again, we find that but little advance had been made up till the introduction of asepsis. Abernethy's valvular method still remained the best, although Gross says that it is not of the slightest use as a curative agent, and that the operation is always in a very short time followed by hectic fever, and by more or less rapid failure of the health and strength, no matter how carefully it may have been performed.

We may therefore take it that of the three advances that have been made anæsthesia is the least important, and, although necessary for present-day surgery, has had the least effect in bringing it to its present position. The essential discovery which is at the foundation of all recent work is that of asepsis, with which the name of Lister must be solely and for ever associated.

The tendency as regards wound treatment in England at the beginning of the Victorian era was in the direction of simplification of the dressings. At that time it was the universal practice to apply silk or hempen ligatures to the large vessels in the wound. These ligatures were not cut short, but were allowed to hang out of the wound, and as few as possible were employed; the smaller vessels which did not actually spout were left to close by the natural process of hæmostasis, aided by pressure and cold. The result was that complete healing by first intention could never occur, as has been already mentioned in the quotation from Fergusson's surgery, for these ligatures had to come away by a process of suppuration and ulceration, and wherever the thread passed out of the wound a suppurating sinus formed and remained till the ligature had separated. Surgeons differed to a great extent as to whether attempts to produce primary union were advisable or not. Probably most surgeons at that time objected to it because where a wound was stitched up with the view of getting primary union, decomposing discharges were very apt to accumulate in the deeper parts and lead to inflammation and suppuration and, not uncommonly, to very serious general infection. The habit of many surgeons was, in the case of an amputation wound, to place a little charpie between the edges of the wound till the surface had become glazed with lymph; the edges of the wound were then brought together either with stitches or plaster, the ligature threads which hung out forming a certain amount of drainage for the wound. Others gave up any attempt to obtain healing by first intention, and continued the stuffing of the wound till granulation had been completely established, and then some allowed the granulating surfaces to come together, with the result that a considerable amount of adhesion took place.

It was in the early part of 1867 that Lister published his first paper on antiseptic treatment, with special reference to compound fractures, and in it he laid down the principles which are now universally recognized as being those which must guide us in the treatment of wounds. He pointed out that it was not the air *per se*, nor the temperature of the air, nor the nature of the injury that led to the calamities which followed wounds, but it was the living particles which were present in the air and on surrounding objects—bacteria, in fact, which, falling into wounds and setting up decomposition of the discharges, and also gaining access to the body, were the root of all the troubles. He showed that the aim of the surgeon during the operation and the object of his dressings afterwards must be to prevent the entrance of living micro-organisms into the wound. The substance which he used for this purpose was carbolic acid, and it is a remarkable fact that, in spite of the numerous investigations that have since been made, and of the numerous antiseptic substances which have since been introduced, carbolic acid still retains its place as the most important of all. This first paper of Lister's was followed by others, in which the system was elaborated, and the first methods of dressing improved, and the further history of the subject has been one of constant advance in the methods of application of the principles, but without any deviation from the essential principles themselves. The principle of wound treatment first enunciated by Lister remains the same at the present day; subsequent investigations have only shown its accuracy, and, although it has been amplified in many directions, it remains and must always remain untouched. Along with the introduction of asepsis Lister also improved the treatment of wounds in a variety of ways. He pointed out the value of proper drainage, the best methods of bringing the edges of the wound together, and he taught us to cut ligatures short, and introduced absorbable ligatures. Thus the silk threads hanging out of wounds were got rid of, and the risk of secondary hæmorrhage was practically abolished.

To follow the further history of the development of the Listerian method would take too long. Coming to the present time we find that two chief plans are employed which differ slightly in procedure, though not at all in principle. The principle underlying both is the exclusion of micro-organisms in the most effectual manner possible, and with the least irritation of the wounded surface. According to the Listerian plan the destruction of the organisms is carried out by means of chemical substances or antiseptics, and their entrance into wounds after the operation is prevented by the use of dressings con-

taining antiseptics, while every care is taken to avoid, as far as possible, the contact of irritating antiseptic solutions with the wound. In the other plan, while, more especially for the disinfection of the skin, antiseptics must be used, the disinfection of the instruments, etc., is carried out by boiling, no antiseptics come in contact with the wounds, and the dressing applied is sterilized by heat, contains no antiseptic material, and merely acts as a filter. The latter plan, which is very difficult to carry out successfully, and in which the smallest error is irremediable, is founded on an exaggerated idea of the amount of irritation of the wound caused by antiseptics. In the antiseptic method the contact of irritating antiseptics such as carbolic acid with the wound is, of course, avoided, and the weak sublimate solution used for the sponges, etc., does not cause any harm, while errors in the asepsis are not nearly so likely to occur, and can be readily remedied. The boiling of the instruments is, no doubt, a valuable point ; but otherwise I have no hesitation in saying that the method, by the use of antiseptics, is the simplest, the most universally applicable, and the one which is most likely to yield satisfactory results in the hands of the greatest number of surgeons.

We may finish this short sketch of the history of wound treatment during the Victorian era by the description of an operation as carried out at the present time on the Listerian principle, with the results that are obtained. The elaborate preparations for an operation nowadays and the care bestowed on the treatment of the wound contrast very markedly with former times. Formerly before an operation every effort was made to get the patient into as good a state of health as possible, but no other precautions were taken, and as soon as the operation was over the surgeon's work was looked upon as practically ended. The dressing of the wound was a very secondary consideration, and was usually left to a nurse to carry out. Nowadays the preparations for an operation and the dressing of the wound are looked on as of the greatest importance, and as requiring the skilled attention of the surgeon in charge of the case.

The aim of the operator is to exclude micro-organisms from the wounds, and, as they are present everywhere in nature, a great deal of care must be taken in order to attain this object. They are more especially present on the skin, both of the patient and of the operator, on the instruments and materials which may come into contact with the wound, and in the air. The aerial organisms, being dry, are usually the spores of bacilli, and fortunately of saprophytic bacilli, so that it is but rarely that organisms possessing pathogenic and infective properties fall into a wound from the air. The chief

organisms which are at work in the production of the various septic diseases are constantly present on the skin, and therefore a very essential point in the treatment is the disinfection of the skin. It has recently been found that this is an extremely difficult thing to carry out completely. The organisms inhabit the old epithelium, they are constantly present about the hairs, and they seem to penetrate for a certain distance into the hair follicles and sebaceous glands. They are naturally most numerous in parts where the skin is moist—for example, in the axilla; and, what is a point of very great importance as regards the operator, they are present under and about the nails. In order to ensure asepsis of the wound it is necessary to pay great attention to the disinfection of the skin. This is carried out in the first instance by soaking the skin with substances such as ether or turpentine—which will dissolve the fat—by scrubbing away the old epithelium with nail brushes, by shaving the region to be operated upon so as to get rid of the hairs, and by thoroughly soaking the skin with strong antiseptic solutions, the most efficacious being a solution of 1 in 20 carbolic acid containing one grain of corrosive sublimate to the ounce. The skin is thoroughly cleaned in this manner, and the carbolic acid solution is allowed to soak into it for some time before an operation. In order to secure disinfection of the surgeon's hands equal care must be taken, and special attention must be paid to the removal of the dirt under the nails and of the old epithelium around the nails. The instruments must be thoroughly disinfected, either by boiling for ten minutes at least, or by prolonged immersion in 1 to 20 carbolic acid solution. The ligatures and stitches must be carefully disinfected in a similar manner. Great attention should be paid to the sponges, which must be soaked in 1 to 20 carbolic acid for several days before use; and in order to prevent accidental infection of the wounds from the blankets, etc., in the neighborhood, the whole area of the operation is surrounded by towels which have been rendered aseptic and which are wet with carbolic acid or sublimate solutions. During the progress of the operation every care is taken not to allow anything that has not been disinfected to come into contact with the wound. Ligatures are now cut short, and frequently, with the view of obliterating the cavity of the deeper part of the wound, deep sutures are inserted; all bleeding points are stopped, union by first intention is aimed at, and with this view numerous stitches are carefully applied so as to bring the edges of the wound into accurate apposition.

Nor is the fight against the micro-organisms ended with the operation. Care must be taken that after the operation the wound is

protected from the entrance of micro-organisms till it has healed. Antiseptic dressings are applied in large quantity and extent, and the part is placed thoroughly at rest and left undisturbed till healing is complete.

Where the operation has been carried out in the manner described, healing by first intention practically always occurs. After the operation, and as soon as the actual pain of the incision has passed away, the patient suffers no more pain ; there is no elevation of temperature or fever, no loss of appetite ; and, where the operation has not been so severe as to cause shock to any marked degree, the patient in a day or two is as well as he was before the operation. There is no swelling of the edges of the wound, no redness of the skin, and when the dressing is removed at the end of the eighth or tenth day, union is found to have occurred along the whole line of incision, the part is absolutely free from pain and tenderness—in fact, the patient is well.—*Abstracted from The Practitioner Jubilee number.*

IMPROVEMENTS IN CERTAIN SURGICAL PROCEDURES DUE TO LISTERISM.

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WE propose to consider some of the newer operations which have been made possible and safe by the application of Listerian principles. The most striking developments of recent surgery have concerned the abdomen, the chest, the brain, and the spine.

Injuries of the liver are now treated by operation, and the treatment of abscesses and cysts of that organ are much more successful than before Listerian methods were introduced. A number of operations are now performed for the relief of gall stones. Professor Mayo Robson, in a recent paper in the *Lancet*, proposes to treat catarrhal cholecystitis or chronic catarrh of the gall-bladder as we do catarrh of the urinary bladder—first by medical and general remedies, and, those failing, to secure physiological rest by means of drainage. He performs cholecystotomy and inserts a drainage tube, and after the third day syringes warm water gently through this tube so as to wash out the ducts, and after a fortnight or more the tube is left out and the wound allowed to close. For empyema of the gall-bladder or suppurative cholecystitis, cholecystostomy is advisable. After exposing the gall-bladder, it will be wise to aspirate before opening it, in order to avoid soiling the tissues with pus. For acute phlegmonous cholecystitis, incision and drainage as above. However, should gangrene of the gall-bladder be present Professor Robson thinks that the gall-bladder should be removed, just as we would remove a gangrenous vermiform appendix.

In cases of permanent obstruction of the common bile duct, incurable biliary fistula and jaundice due to occlusion of the common duct, cholecystenterostomy which was first done in 1882 by Winiwaster, is now considered to be the proper procedure as it is attended by most satisfactory results.

If we next consider some of the operations which are now performed upon the kidney, we will see what remarkable advance has been made. It was only in 1880 that Morris performed his first nephro-lithotomy, an operation which is now undertaken not only to relieve the pain and the hæmaturia, but for the purpose of saving the kidney from any further deterioration. If, however, calculous pyelitis, or calculous hydronephrosis or pyonephrosis be already present, then nephrotomy with drainage should be performed; and if the kidney is so far destroyed as to exclude the possibility of saving it, then nephrectomy should be done as a means of saving the patient's life. Nephrectomy is also performed in cases of tuberculous pyelitis or pyo-nephrosis which have been previously explored and drained by nephrotomy, but in which a sinus and discharge persists. It is also done in certain cases of malignant disease. These fall into two groups—the sarcomata which occur in children before ten, and the carcinomata which occur usually in patients past middle age.

In either case, an operation should only be performed in an early stage, while the growth is still internal to the capsule, and while the health and strength are good. For the condition of hydro-nephrosis, the present opinion seems to be that nephrotomy should first be done, and after a month's drainage, if there is not a considerable diminution of the amount escaping, and where the fluid thus coming away contains but a small amount of urine, and where there is evidence that the other kidney is competent, the cyst and remaining kidney tissue should be removed. For moveable kidney the operation of nephrorrhaphy was first done in 1881 by Hahn of Berlin, but has since been frequently performed with very considerable success.

One of the most recent advances in the surgery of the stomach is the treatment of perforating ulcers. The writer has seen seven successful cases of suturing for this condition.

Further, the operative treatment of fibrous strictures of the pylorus, gastrotomy for the removal of foreign bodies, and gastro-enterostomy have all proved to be measures of very great value. In the same way various operations upon the intestines have been devised and successfully carried out during recent years. Portions of intestine are now excised for injury, gangrene, stricture or malignant disease, and the operation of colotomy is now associated with very little risk. To these operations we must add the removal of the diseased vermiform appendix, the closure of perforating ulcers of the bowel and the successful treatment of intestinal obstruction. In connec-

tion with the latter, it is interesting to note a report by Mr. Bernard Pitts in the *Lancet* of June 12th, of seven consecutive cases of intussusception in infants treated by abdominal section with six recoveries.

The successful treatment by operation of the desperate condition due to the early rupture of the cyst in ectopic gestation, is a development of recent years and has been the means of saving many lives.

The operation of castration or vasectomy has been recently introduced by Dr. J. W. White for senile hypertrophy of the prostate. He says it should be done when the residual urine reaches 12 ounces, and does not diminish under catheterism, owing to the danger of backward pressure on the kidneys increasing atony of the bladder and cystitis. He does not advise it in fairly young patients where there is no impairment of sexual power—but thinks prostatectomy should be done here. In older patients where the sexual power is absent or much enfeebled, or where there is marked renal disease he recommends vasectomy or castration. The operation promises to be a good one in suitable cases, but a sufficient time has not yet elapsed to speak with confidence regarding it.

A new operation has been devised by Kraské for removing a carcinomatous rectum; he excises a portion of the sacrum thus exposing freely the rectum and making its removal a much easier matter than by the older operation.

In connection with the surgery of the chest, the most notable advance has been made in the treatment of the hitherto incurable condition of empyema. The introduction of Estlander's operation of thoracoplasty has rendered this condition curable, and much success has attended the treatment of cavities of the lung.

The surgery of the brain has made rapid strides within recent years owing to antiseptic methods. The operation of trephining for injury, hæmorrhage or abscess is now much more successful owing to the greater accuracy of localization. In 1884 Mr. Godlee successfully removed a tumor from the brain, thus opening up a new field in cerebral surgery.

Excision of a small portion of cortex for epilepsy so as to include the centres which originate the attack as indicated by the muscles first showing convulsive movements, is an operation which has recently been done, but sufficient time has not yet elapsed nor have enough cases been operated upon to form any conclusion as to its utility.

Removal of the gasserian ganglion for trigeminal neuralgia

was first undertaken by William Rose, of King's College Hospital, London, in 1890. This formidable operation is justified by the fact that, as a rule, neuralgia returns within a period of nine months to two years, after neurectomy of the trunks and branches of the fifth nerve by any other operative procedure. Mr. Rose reaches the ganglion by trephining at the base of the skull from without, and his method is called an extra-cranial one.

Horsley, Hartley and Krause get at the ganglion and nerve-trunks within the middle fossa, by going through the side of the skull, their method being intra-cranial. Hartley and Krause's methods are practically the same, and they differ from Horsley's in the following important details: The dura mater is not opened but raised from the middle fossa with the brain. Instead of dividing the sensory root behind the ganglion, the second and third divisions are found in front of this body and resected, and part of the ganglion removed if desired. Cases have not been watched for a sufficiently long time to say if these operations will produce complete cures.

For cases of chronic otitis media, where a discharge has continued for years, where there is perforation of the drum associated with granulations in the tympanic cavity and carious ossicles, the operation of gouging into the mastoid antrum, and from this into the middle ear and scraping out all granulations and diseased ossicles, is now done. It is quite justifiable when one considers the complications which may occur at any time in chronic otitis media, viz., acute inflammation of mastoid cells and mastoid abscess, abscess in the cerebrum or cerebellum, septic thrombosis of lateral sinus, and pyæmia and meningitis.

If septic thrombosis of the lateral sinus has occurred, then the operation suggested by Horsley should be carried out. This consists in ligaturing the internal jugular vein in the neck, so as to obviate the passage of septic material from the sinus along the jugular vein and into the general circulation. Having ligatured the internal jugular vein in the neck opposite the hyoid bone, the wall of the sinus is incised and the septic thrombus thoroughly scraped away. The wound is then plugged firmly with iodoform gauze. This operation has now been done a number of times with complete success.

One might also mention the improvements in plastic surgery and in skin grafting, since antiseptic methods have been in vogue, but sufficient has been said to show the great debt of gratitude that we owe to Lord Lister for his wonderful discoveries which have so completely revolutionized surgery.

LISTERISM AND OBSTETRICS.

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SEMMELWEISS, FORDYCE BARKER, and LISTER are three men, whose names, in my mind, are inseparably connected with the great advances in midwifery during the last fifty years. Semmelweiss made a great discovery which the world did not properly appreciate during his lifetime. Barker made many improvements in the art of midwifery which obstetricians recognized, but during his later years hugged a mistaken theory, as to the nature of puerperal fever, long after it had been exploded. Lister made the greatest discovery of this century, which, fortunately, the world fully appreciates.

Semmelweiss, in 1847, clearly and positively enunciated the view that puerperal fever was caused by the introduction of putrescent substances deposited in or about the genital tract of the parturient woman. He thought that such noxious substances were in reality decomposed animal matter; and also considered it possible that such offending material might be developed in the body of the patient (auto-genetic). These views were adopted by a limited number, and from the year 1848 antiseptics have been used to a greater or lesser extent.

Fordyce Barker commenced the use of antiseptics, including antiseptic vaginal douches, about the year 1854. In addition to the use of antiseptics he practised the strictest cleanliness, and in his teaching urged the importance of the same. He was one of the most impressive teachers I have ever met, and, personally, I have to thank him for many of the vague instincts in the right direction which aided me materially in my earlier years of obstetric work, although I had not for some time any intelligent conception of the principles of Listerism.

Lister, for years before he discovered the relationship between microbes and bad results in wounds, recognized the evil of putrefac-

tion in surgery, and endeavored to counteract it by cleanliness and the use of deodorant lotions. Up to this time he had advanced as far as Semmelweiss and Barker, but no further. Fortunately, however, he did not stop here; but went on with his good work, and applied his knowledge of Pasteurism to surgery. His grand discovery stimulated surgeons, and—what I am more interested in now—obstetricians in all parts of the world, and caused them to make special efforts to avoid septicæmia.

Some have thought that as Semmelweiss and Barker had advanced so far in the direction of aseptic and antiseptic midwifery, their followers would soon, by a process of evolution, have acquired our modern ideas. Strict cleanliness, with or without the use of antiseptic agents, is so simple, and at the same time so effective, that the world must soon have learned to appreciate its virtues, and act accordingly. I will not offer a decided opinion upon this aspect of the question; but I may call attention to the fact that others, before the time of Pasteur and Lister, had appreciated the value of cleanliness, and even of antiseptics, but were not able to sufficiently impress their friends with the importance of their views and methods. In illustration of the fact I will refer to the work of a remarkable surgeon who lived in the first half of this century. I have to give prominence to surgery, because it is from surgeons that we have learned our most valuable lessons concerning the science and art of obstetrics.

Dr. Benjamin W. Dudley was one of the greatest surgeons of this continent. After graduating in Pennsylvania University in 1804, he spent four years in London and Paris, where he studied under such men as Sir Astley Cooper, Abernethy, Baron, and Larry. After returning to his native country in 1808, he practised in Lexington, Kentucky, with signal success. Dr. Bedford Brown, in his memorial address, delivered in 1892, before the Southern Surgical and Gynæcological Association, tells us that his methods in preparing his patients for operation, and practising asepsis and antisepsis in the most minute details, were remarkably like those now employed. I will quote from Dr. Brown as follows: "While in these times bacteriology was a science unknown, and sepsis and antisepsis were things unheard of, Dudley understood the principles of asepsis, and he knew that all dirt and filth contained the seeds of disease, and to place his patient beyond the pale of disease was to preserve him in an absolute state of cleanliness." Before operating, his patients were always thoroughly cleansed by means of soap and hot water. All instruments and other articles which came in con-

tact with the patients were washed in hot water. All sorts of wounds and injuries were treated by copious applications of hot water, such applications being continued sometimes for hours. The operator and assistants were expected to make themselves thoroughly clean by the free use of hot water and soap. In all cases the hot water had previously been boiled for a considerable length of time. Unfavorable results, Dr. Brown says, such as suppurative fever, erysipelas, and gangrene, were unknown in his practice. He performed the operation of lateral lithotomy two hundred and twenty-five times with the loss of only three cases, and was equally successful in various other branches of surgery.

The methods of Dudley were excellent, and very similar to those of many of our best surgeons at the present time, but they were soon forgotten even in his own city. Is it possible that modern aseptic and antiseptic methods will be forgotten in a hundred years from now! There is, probably, a general consensus of opinion that they will always be remembered, because the great work of Lister has placed the art of surgery on a thoroughly scientific basis. We all hope and believe that surgery in the future will continue to advance, and that the world will never go back to the dark ages of pre-Listerism.

Listerism has completely revolutionized our views and our methods in obstetrics. The idea that puerperal fever is a specific disease, like scarlet fever, is replaced by the opinion that it is a preventable disease produced by microbes which come from without. Auto-genetic puerperal fever, as it was formerly understood, is not now recognized. Our former theories as to varied forms of inflammation occurring during the puerperal period are changed and simplified, because we have accepted Lister's views as to the causes of surgical diseases.

About the year 1872 obstetricians commenced to use Listerian methods, especially in large maternity hospitals. The new ideas and the new methods spread rapidly from hospital to hospital in Germany, France, Great Britain, America and other countries. Rigid antiseptic methods were adopted, with marvellous changes in the mortality rates. Those horrible epidemics of that fearful scourge, puerperal septicæmia, with its almost countless victims, were rapidly being repressed. The carefully prepared reports, and minute descriptions of the various methods employed, were circulated over the whole civilized world, and incalculable good was derived therefrom. Mortality rates of 5 to 10 per cent., or even more, were speedily reduced to about one-half of 1 per cent.

in all our well-ordered maternity hospitals, both in the old and the new world.

The wonderful reduction in mortality rates does not, however, tell the whole story. It tells us that many thousands of lives have been saved during the last twenty-five years through the application of Listerian methods ; but it does not tell us how many other thousands have been relieved from the ill effects of septicæmia, which kills not, but cripples sadly. It is very unsatisfactory in this connection to find that the general results in private practice have not kept pace with those in lying-in hospitals. The annual reports of the Registrar-General of Great Britain show that the death rates from childbirth have not appreciably diminished in England and Wales. In the United States and Canada the mortality from puerperal septicæmia has probably diminished during the last twenty years, but it is still very high.

It is interesting to consider the work of some of the early enthusiastic admirers of antisepticism. Many of them understood only in part Lister's views concerning inflammation as it occurs in injured tissues. As Stewart has told us "wounds were being pickled in antiseptics, and abscess cavities were being overdistended with carbolic acid." Many obstetricians went to almost absurd extremes in their desires to out-Lister Lister. One eminent obstetrician and gynecologist of New York insisted that vaginal injections should be employed every four hours after labor had commenced, and every eight hours after it was concluded. In addition, in six or eight hours, suppositories of cocoa butter, containing three to five grains of iodoform, should be placed under the os uteri every two or three hours for at least ten days. This meant that after a normal labor the bruised, and perhaps lacerated vagina was to be invaded from eleven to fifteen times every twenty-four hours for at least ten days. Fortunately such meddlesome methods did not become popular, although excessive douching was carried out for years in certain quarters. Most of us now are inclined to imitate Lister, so far as we understand him, and simply try to prevent the ingress of pathogenic organisms, and at the same time allow Nature to do her admirable work in her own inimitable way.

Some endeavored conscientiously to employ all Lister's earlier methods with his rather cumbersome apparatus. We find that in the British Lying-in Hospital his manner of cleaning the wards was imitated ; also, a long-spouted kettle containing a solution of carbolic acid was placed in the centre of each ward. This was kept heated so as to produce a continuous spray which was especially directed

towards the vulva during labor. It was thought that this prevented the entrance of germs into the uterus when the vagina was dilated by the passage of the child. The other details of Listerism were faithfully carried out, and the results were remarkably good. Such methods of using the spray during labor were, however, very troublesome, and decidedly objectionable, especially in private practice, and were not generally employed. The discovery that the spray was useless was a great boon to midwifery.

I have not the space in this number to say much as to the great progress of obstetrical surgery, which has been made possible through Listerism. Much that has already been said with reference to general surgery, by Lister, Stewart, Cheyne, and Bruce, will apply to obstetrics. Modern antiseptic surgery has taught us much about the nature of pelvic inflammations. Many of the difficulties and obscurities in connection with ectopic gestation have been removed, and we now fully realize the vast importance of tubal pregnancy. Operative procedures in cases of ectopic pregnancy have saved many valuable lives.

The increased frequency of, and favorable results attained in operations for ruptured uterus, in Cæsarian section, Porro's operation, and symphysiotomy are well known. For a time some thought that Porro's operation was going to replace Cæsarian section, and the good results following the former seemed, for a time, to justify such opinions; but careful work on the part of skilled operators has wonderfully improved the methods and results in Cæsarian section. One of the most pleasing features connected with modern obstetric surgery is the fact that the horribly revolting operation—craniotomy, or more correctly embryotomy, on a living child (for some time a sad blot on the escutcheon of one of the most brilliant obstetrical schools in the world) has practically become obsolete.

The simplicity of Lister's discovery, and its application to the surgical art may be to some extent misleading. The simplicity is perhaps more apparent than real. In the minds of many the simplicity gives way to obscurity. For instance, a worthy and zealous practitioner told me a few days ago he had "tried those antiseptic remedies and found them useless." He had used carbolic acid, 1-40 and 1-20; he had tried the bichloride, 1-1000, and 1-500; but he got a large amount of pus. What answer is one to make to such a practitioner? I scarcely know, but I would like to advise a course of study of two years in order that he might learn Listerism—with all its simplicity. I have seen many careful and conscientious obstetricians who use soap and water—carbolic acid, bichloride, and

iodoform, and yet do not practise Listerism ; and, with them, the most unfortunate feature is that they think they do. Have any of us reached perfection in our methods? Not, so far as I know, if we may judge from our results. Let us all then cultivate one of Lister's most admirable qualities—humility, and copy him so far as we can, in every way, and make earnest efforts, by careful study, patient investigation, and intelligent observation to improve our methods and attain better results in our treatment of parturient women.

THE INFLUENCE OF LISTERISM ON MODERN MEDICINE.

BY THOMAS F. McMAHON, M.D.,

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TO form any fair conception of the influence of the work and teachings of Lister upon the science and art of medicine it would be necessary in the first place to examine the views accepted concerning the nature of various diseases before his time and to compare them with those accepted to-day; and in the second place to give credit where it is due to the work of the other great men who shared with him the labor and ought to wear with him the laurels. The one great advance of modern medicine has been the recognition of the germ origin of many of the most prevalent and fatal diseases and the application in some instances of our knowledge of the life history of these micro-organisms to the cure of the conditions they induce. Darwin paved the way by his masterly demonstration of the struggle for existence of contending forms of life, and made easy the conception that many of the ills which afflict the human organism might be due to the struggle of lower forms of animal and vegetable life to live and flourish at the expense of the cells and tissues of the human body. The improvements in the microscope made it possible to study these minuter organisms.

Although vague descriptions of bacteria appear as early as the seventeenth century the first great advance was the proof, some sixty years ago, that yeast fermentation was due to a living organism. The final refutation of the doctrine of spontaneous generation, and the demonstrations that all living cells, whether bacteria, yeast, moulds, or brain cells are derived from similar pre-existing living organisms are of comparatively recent date. As early as 1836 it was shown that boiling would destroy germs capable of developing in animal and vegetable infusions, and that such infusions would remain sterile even though exposed freely to air if the access of fresh germs was prevented. As early as 1837 the spores which were afterwards proved by Pasteur to be the specific cause of the silk

worm disease were described by Bassi, and twelve years later Davaine described organisms in the blood of cattle afflicted with splenic fever, and it was suggested that they might be the cause of the disease. Indeed, by 1857 the way was already paved for antiseptic surgery, and it only awaited the genius of Lister to recognize the relation of micro-organisms with septic processes, and to apply the means already hinted at for the prevention of the development of these organisms. Vanderbroek even went so far in this direction as to demonstrate that such fluids as urine, grape juice, and blood, could be kept from decomposing by receiving them into receptacles thoroughly sterilized by heat, and preventing the access of air not sterilized by filtration through cotton-wool or otherwise.

In 1862 Pasteur proved the impossibility of putrefaction occurring in organic liquids without the access of micro-organisms, and demonstrated the distinction between aërobic and anaërobic organisms.

Lister made his first experiments on the antiseptic treatment of wounds in 1865, and two years later insisted that wounds would heal without suppuration if micro-organisms were excluded. Year after year he labored on, gradually improving his methods, until finally he perfected the antiseptic treatment of wounds. The splendid practical results which followed the application of his methods, of course, gave a tremendous stimulus to investigations into the relations of micro-organisms to disease, and as a result, a flood of light was thrown upon the nature of many diseases. Old theories and beliefs disappeared forever, and scientific certainty succeeded blind groping in dark places. Text-books of medicine had to be re-written, and even to-day the industrious student can hardly keep pace with the progress of bacteriological research. To form some conception of the progress of our knowledge of infectious diseases during the last twenty years it is only necessary to compare the text-book of that time with that of to-day. The writer has reviewed the text-book he read when a student, viz., "Bristowe's Practice of Medicine," dated 1879. The dependence of the infectious diseases upon micro-organisms is only hinted at. A specific virus is spoken of, but the nature of the virus is not specified. However, speaking of the etiology of infectious diseases generally, a shrewd guess is given as to their origin in the following passage: "But here we have poisons or irritants which do multiply in the system, it may be a billionfold, every unit of whose product is as efficient in imparting disease as was the unit from which it sprung. These facts seem quite incompatible with any other view of the nature of these

causes, than that they are actual living things." "Some evidence to the effect that the contagia consist in marvellously minute particles of living matter or protoplasm, has been adduced."

The study of the anatomical condition of diseased organs certainly threw but little light upon the best means to treat diseased conditions, and such valuable knowledge as was possessed of specific remedies was almost purely empirical. Indeed the physician's art often antedated its scientific basis. Even to-day but moderate progress has been made in the internal treatment of disease by means of drugs, and scientific therapeutics is still in its infancy. With the knowledge that many such diseased conditions are due to the struggle for existence of contending forms of life, has come a mighty effort to keep the enemy at a safe distance, or, if it succeed in coming to close quarters, to place the cells and tissues of the human organism under such conditions that the contest will have a successful issue.

The development of bacteriology is the great stride onward of modern medicine, and it owed its mightiest impulse to the work of perhaps the two greatest men of the century, Lister, who is to-day Canada's honored guest, and the great Frenchman who so lately passed away—Louis Pasteur. If, of the former it may be truly said that "scientific surgery begins with Lister," then we may none the less justly designate Pasteur "the father of scientific medicine." From his work the whole system of serum therapeutics has developed. Others have done splendid service, but these two names stand out above the rest. The practical results have been greater in surgery than in medicine, but in the latter we are only upon the threshold of its possibilities, and the results, preventive and curative, that we have attained in such diseases as small-pox, rabies, tetanus, diphtheria, plague, cholera and malaria will surely be extended to many other diseases. Every year is adding to our knowledge, and the Lister of the twentieth century will wield mighty weapons in his struggle with disease and death. Already the microscope and culture-tube are of inestimable value in the diagnosis, among other diseases, of tuberculosis, diphtheria, anthrax, pneumonia, cholera, septicæmia, typhoid fever, malaria, dysentery, bubonic plague, epidemic meningitis, leprosy, tetanus, influenza, and probably yellow fever. The study of immunity, antitoxins, etc., promises important results, and one of the things best worth living for in the coming twentieth century will be to see, and perchance to share in, the triumphs of the most beneficent of the sciences—that one which has to do with the alleviation of suffering and the prevention and cure of disease.

THE BRITISH MEDICAL ASSOCIATION.

AT the meeting of the British Medical Association, held in Nottingham, in 1892, Sir William Hingston said, he "trusted that at no very distant date the British Medical Association would see their way to paying Canada a visit. They would there find a heterogeneous population—French, English, Scotch, and Irish—but amongst them all an intense love of British institutions, and a very deep attachment to Her Most Gracious Majesty Queen Victoria; and if the Association would do them the honor suggested, he could assure for the members a most cordial and hearty welcome. Again, last year Drs. Roddick, Armstrong, and Adami, of Montreal, and Drs. Cameron, Peters, Macallum, and Doolittle, of Toronto, speaking on behalf of Canada, invited the Society to hold the 1897 meeting in Montreal. The Council accepted the invitation without a dissentient voice, and nominated Dr. Roddick as President elect. This decision pleased the profession of Canada, and its members in various parts of the Dominion have given Dr. Roddick and the members of the local committee valuable assistance in making the preliminary arrangements for the recent meeting.

The British Medical Association is now sixty-five years old. Its growth in earlier years was slow, but during the last thirty years it has grown with marvellous rapidity. Dr. White, the President at the Nottingham meeting, held five years ago, gave some interesting facts connected with the history of the Association. He stated that he was secretary at a former meeting held in Nottingham in 1857, when there were between 80 and 90 in attendance. The Association was then twenty-five years old and numbered 2,065, while at that time (1892) it numbered over 14,000. In its earlier days it was called the Provincial Medical and Surgical Association, but in 1855 it was felt that the influence of the Association should no longer be confined to provincial limits, and after careful consideration the title was changed, and it became the British Medical Association. In the following year the meeting was held in Edinburgh, under the presidency of Professor Allison. In 1862 the annual meeting was held in London, and in 1867 the first meeting was held in Dublin.

During the meeting of 1857, in Nottingham, all the sessions were held in one small room known as the assembly room. During the Dublin meeting, in 1867, it was found that the work had increased to such an extent that it was necessary to divide into sections. From year to year since that time the sections have increased in number, and in the amount and importance of their work. There were eleven sections this year.

Dr. Roddick, in his presidential address, gave some interesting facts in connection with the growth of the Association, and especially its branches. In 1837, five years after it was organized, there were three branches, namely, the East Anglican, the Bath and Bristol, and the Lancashire and Cheshire. In 1878 there were thirty, one of which was in Jamaica—the first colonial branch formed. There are now sixty-five branches, with a total membership of nearly 17,000. Of the branches, twenty-seven are Indian and Colonial. The first Canadian branch was formed in Halifax in 1887. Branches were formed in British Columbia, Manitoba, Toronto and Montreal in 1891, and in Ottawa and Quebec in 1897. There are, therefore, seven Canadian branches.

THE MEETING IN MONTREAL.

To say that the Montreal meeting was a grand success is simply giving expression to a well known fact in very plain and simple words. One feels, however, that numerous accentuated superlatives are absolutely necessary in giving anything like a correct description of this great gathering. We will not attempt to use such, but will simply say that the success of the meeting has in all respects exceeded the most sanguine expectations of all physicians interested, both in Great Britain and Canada. To whom is all this success due? To his Excellency the Governor-General of Canada; to the Lieutenant-Governor of Quebec; to the Mayor, and Council, and citizens of Montreal; to the officers of the Association; to the president and members of the local committee; to the officers of sections; to the profession of Great Britain (including the lion of the day—Lord Lister), who came “across the water” to take part in the proceedings; to the profession of Canada. We who are Canadians, but not of Montreal, must give the chief credit to the profession of that great city.

Montreal is noted for her generous hospitality, which has so frequently been shown in the past; but this time she far exceeded any and all of her former efforts. Her physicians united in a continuous and untiring effort to keep the enormous machinery of the meeting.

in good running order, and to royally entertain their guests, both British and Canadian. Their work in the former direction was perfect and complete, their hospitality was more than ordinary mortals could accept in its entirety.

A meeting of the Association outside of Great Britain is, of course, a remarkable event, and the success of the Montreal meeting is likely to have a marked effect on the future history of this great medical organization. *The London Lancet* speaks as follows :

"It seems to us that with this meeting at Montreal, memorable as it will be in many ways, the British Medical Association enters upon a new career. Those of its members who are attending it from England will realize that in Greater Britain the medical profession is animated by the same spirit as at home ; that with the common participation of membership of the same body there must be equally the common desire towards the same ends, the furtherance of the art and science of medicine for the sake of humanity, the promotion of fellowship between those who pursue the same calling. More than this, it may be hoped that, as the Association expands, its sphere of work will widen, too, and that some of those objects rehearsed by Dr. Roddick as originally propounded by its founders will be extended to all the Empire. The subject matter of the president's address suggests, indeed, one line of useful work, which might well be undertaken, namely, the collation of records as to the climatic and physical conditions of the various countries in which the branches of the Association exist, and the collective investigation of disease on a more ample scale than was originally contemplated by those earnest and enthusiastic advocates of this line of inquiry, the late Sir George Humphrey and the late Dr. Mahomed. The Association has long ceased to be "provincial," it is now more than insular, and with its world-wide expansion must come the growth of new ideas, the emancipation from the fetters of narrow policies and the working together of the medical profession of the British Empire to attain all that is most worthy in the promotion of professional aims and to maintain a high standard of professional honor."

OPENING CEREMONIES.

The opening ceremonies connected with the meeting were very impressive and exceedingly interesting. A service was conducted in Christ's Church Cathedral at 12 o'clock, during which a sermon was preached by the Right Rev. Dr. Dumoulin, Lord Bishop of Niagara, from the text "How God anointed Jesus of Nazareth with the Holy Ghost and with power : who went about doing good,

and healing all that were oppressed of the devil ; for God was with him " Acts 10th chapter and 38th verse. In the early part of his discourse he referred to the notable gathering in London this year in connection with the Jubilee celebration, which was one of the most remarkable events in the history of the British empire. He spoke at length and in a kindly way of the medical profession, saying that its work was comparable only to that of the Church.

It is needless to say that this discourse, delivered by one of the most powerful pulpit orators on this continent, was listened to with wrapt attention.

FORMAL OPENING OF THE MEETING.

The meeting was formally opened in the afternoon, when a large assembly was gathered together in the Windsor Hall. The president of the council, Dr. Robert Saundby, of Birmingham, occupied the chair. Dr. Saundby first explained the circumstances under which the meeting was adjourned from London, and introduced amid great applause the new president, Dr. T. G. Roddick, who took the chair, and at once called upon the Mayor to extend a welcome to the association in the name of the city of Montreal. His Worship said it seemed very proper that the British Medical Association should hold in the metropolitan city of the Dominion the first meeting that it held outside of the British Isles, and it also seemed quite in keeping that it should be held in a British colony under a colonial president, for it showed that the association belonged not only to Great Britain, but to Greater Britain.

SIR J. A. CHAPLEAU.

The president then called upon Sir J. A. Chapleau, the Lieutenant-Governor of Quebec, who said he would not attempt to make an elaborate address of welcome, but he might be allowed to say that they were in a province where was appreciated the mission that the association had undertaken in coming amongst us. The visit was made under the most auspicious conditions—it was made in this year of Her Majesty's Jubilee, which was a good omen for those closer and stronger bonds that must unite Great Britain our *mere patrie*, the mother country, and this great colony of Canada, which was one portion, and would be one great portion of that Greater Britain to which the Mayor had referred. It had been said in England by the authorized representative of Canada, that Canada was a nation, and that liberty was its nationality. Yes—we were free—we owed it to the generosity of our beloved Queen—we owed it to the generosity of the British Parliament—but we owed it still more to

the liberality of the British people themselves. We were in accord with them in this province—our national preferences were free, and our loyalty was free, and that loyalty was as sound, was as solid and everlasting as truth was truth, and heart was heart in man.

THE GOVERNOR-GENERAL.

The president then called upon His Excellency, Lord Aberdeen, to extend a welcome to the visitors on behalf of the Dominion—His Excellency said—This being the third speech on the present occasion, he trusted the visitors would believe and realize that they were indeed thrice welcome. After making some humorous references to the magnificent distances in the great Dominion of Canada, he said that the visit of the Association appealed to the feelings, as well as the practical and prudential instincts, of the Canadian people. It also appealed to their public spirit and patriotism. We, as British subjects, welcome our brothers, and our kith and kin.

INTRODUCTION OF DELEGATES.

This was an interesting ceremony, in which Professor Adami, one of the local secretaries, introduced to the President and to the Governor-General the delegates from France, the United States, and other countries.

INVITATION FROM WINNIPEG.

Dr. O'Donnell said that before leaving Winnipeg he was commissioned by the Premier of Manitoba to invite the association to hold their next year's meeting, or some meeting in the near future, in the city of Winnipeg. He was aware that as this was the first meeting held outside of the United Kingdom the request coming as it did from a very young city might seem a little presumptuous; he desired to say, however, that although thirty years ago Winnipeg was only an outpost of civilization, yet it was now a prosperous and flourishing city, containing something like 50,000 inhabitants, situated precisely in the centre of the British North American continent.

Dr. Saundby, on behalf of the association, thanked Dr. O'Donnell for the invitation, and said the council in London would be very glad to take the matter into consideration.

THE PRESIDENT'S ADDRESS.

The able, popular, and genial president was received with long continued applause—the members of the association in both Great Britain and Canada appreciate very highly the magnificent work

which Dr. Roddick has done during the last year in the interest of this great meeting. As an instance of his zeal, we may recall the fact that in January he paid a special visit to Great Britain to assist the council in making preliminary arrangements, and also to induce as many as possible of the leaders of the profession to attend the Montreal meeting, and take a prominent part in it. In addition, he has visited many parts of the Dominion to consult with the officers of the various branches, and with leading men in other centres. He has also worked assiduously and continuously with the local committee in Montreal. It is only fair, therefore, to say that a large measure of the great success which has attended the meeting, is due to the personal efforts of the president.

In his address he referred to the loyalty of the Canadians, and to Sir Wilfrid Laurier's visit to England. He then spoke of the scientific achievements of Professor Richet and Lord Lister.

After a graceful reference to Dr. Henry Barnes (we desire to say that Dr. Henry Barnes is in no way related to Dr. Robert Barnes nor his son, Dr. Fancourt Barnes, of London, but is a prominent surgeon living in Carlisle, who was president of the association last year), and Dr. Saundby, the president, and other members of the council, he went on to say that the address in medicine at this meeting would be delivered by one whose reputation is now world-wide—by our Osler—whose professional education was in great part received in this city, and who, I am happy to say, is still a Canadian. How he has been able to escape the Alien Law is a puzzle to many, but he has really only been borrowed for a time—he is merely passing through the United States in bond.

He then referred to the history of the association, which was organized in 1832 by Sir Charles Hastings, of Worcester, and a few of his friends, and went on to show the rapidity of its growth in Great Britain and also its progress during later years in Canada.

He then spoke of climatic conditions in Canada, and the intellectual progress of its people, referring especially to the subjects of medical education and medical legislation, and concluded by expressing the wish that the visitors would enjoy their visit to Canada.

After a cordial vote of thanks, moved by Lord Lister, and seconded by Sir James Grant, the opening proceedings were terminated.

BRITISH MEDICINE IN GREATER BRITAIN.*

BY WILLIAM OSLER, M.D., F.R.C.P.,

Professor of Medicine, Johns Hopkins University, Baltimore.

TO trace successfully the evolution of any one of the learned professions would require the hand of a master—of one who, like Darwin, combined the capacity for patient observation with philosophic vision. In the case of medicine the difficulties are enormously increased by the extraordinary development which belongs to the history of the present century. The rate of progress has been too rapid for us to appreciate, and we stand bewildered and, as it were, in a state of intellectual giddiness, when we attempt to obtain a broad, comprehensive view of the subject. In a safer “middle flight” I propose to dwell on certain of the factors which have moulded the profession in English-speaking lands beyond the narrow seas—of British medicine in Greater Britain. Even for this lesser task (though my affiliations are wide and my sympathies deep) I recognize the limitations of my fitness, and am not unaware that in my ignorance I shall overlook much which might have rendered less sketchy a sketch necessarily imperfect.

Evolution advances by such slow and imperceptible degrees that to those who are part of it the finger of time scarcely seems to move. Even the great epochs are seldom apparent to the participators. During the last century neither the colonists nor the mother country appreciated the thrilling interest of the long-fought duel for the possession of this continent. The acts and scenes of the drama, to them detached, isolated and independent, now glide like dissolving views into each other, and in the vitascope of history we can see the true sequence of events. That we can meet here to-day, Britons on British soil, in a French province, is one of the far-off results of that struggle. This was but a prelude to the other great event of the eighteenth century: the revolt of the colonies and the founding of

* The Address in Medicine at the British Medical Association, Montreal, Aug 31st, 1897.

a second great English-speaking nation—in the words of Bishop Berkeley's prophecy, "Time's noblest offspring."

Surely a unique spectacle that a century later descendants of the actors of these two great dramas should meet in an English city in New France! Here, the American may forget Yorktown in Louisburg, the Englishman Bunker Hill in Quebec, and the Frenchman both Louisburg and Quebec in Chateauguay; while we Canadians, English and French, in a forgiving spirit, overlooking your unseemly quarrels, are only too happy to welcome you to our country—this land on which and for which you have so often fought.

Once, and only once, before in the history of the world could such a gathering as this have taken place. Divided though the Greeks were, a Hellenic sentiment of extraordinary strength united them in certain assemblies and festivals. No great flight of imagination is required to picture a notable representation of our profession in the fifth century B.C. meeting in such a colonial town as Agrigentum, under the presidency of Empedocles. Delegates from the mother cities, brilliant predecessors of Hippocrates of the stamp of Damocedes and Herodicus, delegates from the sister colonies of Syracuse and other Sicilian towns, from neighboring Italy, from far distant Massilia, and from still more distant Panticapæum and Istria. And in such an assemblage there would have been men capable of discussing problems of life and mind more brilliantly than in many subsequent periods, in proportion as the pre-Hippocratic philosophers in things medical had thought more deeply than many of those who came after them.

We English are the modern Greeks, and we alone have colonized as they did, as free peoples. There have been other great colonial empires, Phœnician, Roman, Spanish, Dutch and French, but in civil liberty and intellectual freedom Magna Græcia and Greater Britain stand alone. The parallel so often drawn between them is of particular interest with reference to the similarity between the Greek settlements in Sicily and the English plantations on the Atlantic coast. Indeed, Freeman says: "I can never think of America without something suggesting Sicily, or of Sicily without something suggesting America." I wish to use the parallel only to emphasize two points, one of difference and one of resemblance. The Greek colonist took Greece with him. Hellas had no geographical bounds, "Massilia and Olbia were cities of Hellas in as full sense as Athens or Sparta." While the emigrant Britons changed their sky, not their character, in crossing the great sea; yet the home-stayers had never the same feeling toward the plantations as the Greeks had towards the colonial cities

of Magna Græcia. If, as has been shrewdly surmised, Professor Seely was Herodotus reincarnate, how grieved the spirit of the father of history must have been to say of Englishmen, "nor have we even now ceased to think of ourselves as simply a race inhabiting an island off the northern coast of the continent of Europe." The assumption of gracious superiority which, unless carefully cloaked, smacks just a little of our national arrogance, is apt to jar on sensitive colonial nerves. With the expansion of the Empire, and the supplanting of a national by an imperial spirit this will become impossible. That this sentiment never prevailed in Hellas, as it did later in the Roman Empire, was due largely to the fact that in literature, in science and in art, the colonial cities of Greece early overshadowed the mother cities. It may be because the settlements of Greater Britain were things of slower growth that it took several generations and several bitter trials to teach a lesson the Greeks never had to learn.

The Greek spirit was the leaven of the old world, the workings of which no nationality could resist; thrice it saved western civilization, for it had the magic power of leading captivity captive and making even captive conquerors the missionaries of her culture. What modern medicine owes to it will appear later. "The love of science, the love of art, the love of freedom—vitally correlated to each other, and brought into organic union," were the essential attributes of the Greek genius (Butcher). While we cannot claim for the Anglo-Saxon race all of these distinctions it has in a high degree that one which in practical life is the most valuable, and which has been the most precious gift of the race to the world—the love of freedom,

"Of freedom in her regal seat
Of England."

It would carry me too far afield to discuss the differences between the native Briton and his children scattered so widely up and down the Earth. In Canada, South Africa, Australia, and New Zealand, types of the Anglo-Saxon race are developing which will differ as much from each other, and from the English, as the American does to-day from the original stock; but amid these differences can everywhere be seen those race-qualities which have made us what we are—"courage, national integrity, steady good sense, and energy in work." At a future meeting of the association, perhaps in Australia, a professional Sir Charles Dilke with a firm grasp of the subject may deal with the medical problems of Greater Britain in a manner worthy of the address in medicine. My task, as I mentioned at the outset, is much less ambitious.

Could some one with full knowledge patiently analyze the char-

acteristics of British medicine he would find certain national traits sufficiently distinct for recognition. Three centuries cannot accomplish very much (and that period has only just passed since the revival of medicine in England), but the local conditions of isolation, which have been singularly favorable to the development of special peculiarities in the national character have not been without effect in the medical profession. I cannot do more than touch upon a few features, which will be useful as indicating the sources of influence upon Great Britain in the past, and which may perhaps be suggestive as to lines of progress in the future.

Above the fire-place in Sir Henry Acland's study are three pannelled portraits of Linacre, Sydenham, and Harvey; the scroll upon them reads *Litteræ, Praxis, Scientia*. To this great triumvirate—as to the fountain heads, we may trace the streams of inspiration which have made British medicine what it is to-day.

Linacre, the type of the literary physician, must ever hold a unique place in the annals of our profession. To him was due in great measure the revival of Greek thought in the 16th century in England, and in the last Harveian oration Dr. Payne has pointed out his importance as a forerunner of Harvey. He made Greek methods available; through him the art of Hippocrates and the science of Galen became once more the subject of careful, first-hand study. Linacre, as Dr. Payne remarks, "was possessed from his youth till his death by the enthusiasm of learning. He was an idealist devoted to objects which the world thought of little use." Painstaking, accurate, critical, hypercritical perhaps, he remains to-day the chief literary representative of British medicine. Neither in Britain nor in Greater Britain have we maintained the place in the world of letters created for us by Linacre's noble start. It is true that in no generation since has the profession lacked a man who might stand unabashed in the temple at Delos; but judged by the fruits of learning scholars of his type have been more common in France and Germany. Nor is it to our credit that so little provision is made for the encouragement of these studies. For years the reputation of Great Britain in this matter was sustained almost alone by the great Dee-side scholar, the surgeon of Banchory, Francis Adams—the interpreter of Hippocrates to English students. In this century he and Greenhill have well maintained the traditions of Linacre. Their work, and that of a few of our contemporaries, among whom Ogle must be specially mentioned, has kept us in touch with the ancients. But by the neglect of the study of the humanities, which has been far too general, the profession loses a very precious quality.

While in critical scholarship and in accurate historical studies British medicine must take a second place, the influence of Linacre exerted through the Royal College of Physicians and the old Universities has given to the humanities an important part in education, so that they have moulded a larger section of the profession than in any other country. A physician may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him those finer qualities of heart and head which count for so much in life. Pasture is not everything, and that indefinable, though well understood, something which we know as breeding, is not always an accompaniment of great professional skill. Medicine is seen at its best in men whose faculties have had the highest and most harmonious culture. The Lathams, the Watsons, the Pagets, the Jenners, and the Gairdners have influenced the profession less by their special work than by exemplifying those graces of life and refinements of heart which make up character. And the men of this stamp in Greater Britain have left the most enduring mark—Beaumont, Bovell, and Hodder in Toronto ; Holmes, Campbell, and Howard in this city ; the Warrens, the Jacksons, the Bigelows, the Bowditches, and the Shattucks in Boston ; Bard, Hossack, Francis, Clark, and Flint of New York ; Morgan, Shippen, Redman, Rush, Coxe, the elder Wood, the elder Pepper, and the elder Mitchell of Philadelphia—Brahmins all, in the language of the greatest Brahmin among them, Oliver Wendell Holmes—these, and men like unto them, have been the leaven which has raised our profession above the dead level of a business.

The *litteræ humaniores*, represented by Linacre, revived Greek methods ; but the Faculty during the sixteenth and at the beginning of the seventeenth centuries was in a slough of ignorance and self-conceit, and not to be aroused even by Moses and the prophets in the form of Hippocrates and the fathers of medicine. In the pictures referred to, Sydenham is placed between Linacre and Harvey ; but science preceded practice, and Harvey's great Lumleian lectures were delivered before Sydenham was born. Linacre has been well called, by Payne, Harvey's intellectual grandfather. "The discovery of the circulation of the blood was the climax of that movement which began a century and a half before with the revival of Greek medical classics, and especially of Galen." (Payne.) Harvey returned to Greek methods and became the founder of modern experimental physiology and the great glory of British scientific medicine. The demonstration of the circulation of the blood remains in every detail a model research. I shall not repeat the oft-told tale of Harvey's great and enduring influence, but I must refer to one

feature which, until lately, has been also a special characteristic of his direct successors in Great Britain. Harvey was a practitioner and a hospital physician. There are gossiping statements by Aubrey to the effect that "he fell mightily in his practice" after the publication of the *De motu cordis*, and that his "therapeutic way" was not admired; but to these his practical success is the best answer. It is remarkable that a large proportion of all the physiological work of Great Britain has been done by men who have become successful hospital physicians or surgeons. I was much impressed by a conversation with Professor Ludwig in 1884. Speaking of the state of English physiology, he lamented the lapse of a favorite English pupil from science to practice; but, he added, "while sorry for him, I am glad for the profession in England." He held that the clinical physicians of that country had received a very positive impress from the work of their early years in physiology and the natural sciences. I was surprised at the list of names which he cited; among them I remember Bowman, Paget, Savory, and Lister. Ludwig attributed this feature in part to the independent character of the schools in England, to the absence of the university element so important in medical life in Germany, but, above all, to the practical character of the English mind, the better men preferring an active life in practice to a secluded laboratory career.

Thucydides it was who said of the Greeks that they possessed "the power of thinking before they acted, and of acting, too." The same is true in a high degree of the English race. To know just what has to be done, then to do it, comprises the whole philosophy of practical life. Sydenham—*Angliæ lumen*, as he has been well called, is the model practical physician of modern times. Linacre led Harvey back to Galen, Sydenham to Hippocrates. The one took Greek science, the other not so much Greek medicine as Greek methods, particularly intellectual fearlessness, and a certain knack of looking at things. Sydenham broke with authority and went to nature. It is an extraordinary fact that he could have been so emancipated from dogmas and theories of all sorts. He laid down the fundamental proposition, and acted upon it, that "all diseases should be described as objects of natural history." To do him justice we must remember, as Dr. John Brown says, "in the midst of what a mass of errors and prejudices, of theories actively mischievous, he was placed, at a time when the mania of hypothesis was at its height, and when the practical part of his art was overrun and stultified by vile and silly nostrums." Sydenham led us back to Hippocrates, I would that we could be led oftener to Sydenham!

How necessary to bear in mind what he says about the method of the study of medicine. In writing, therefore, such a natural history of diseases, every merely philosophical hypothesis should be set aside, and the manifest and natural phenomena, however minute; should be noted with the utmost exactness. The usefulness of this procedure cannot be easily overrated, as compared with the subtle inquiries and trifling notions of modern writers, for can there be a shorter, or indeed any other way of coming at the morbid causes, or discovering the curative indications than by a certain perception of the peculiar symptoms? By these steps and helps it was that the father of physic, the great Hippocrates, came to excel, his theory being no more than an exact description or view of nature. He found that nature alone often terminates diseases, and works a cure with a few simple medicines, and often enough with no medicines at all. Well, indeed, has a recent writer remarked: "Sydenham is unlike every previous teacher of the principles and practice of medicine in the modern world." Sydenham, not Linacre or Harvey, is the model British physician in whom were concentrated all those practical instincts upon which we lay such stress in the Anglo-Saxon character.

The Greek faculty which we possess of thinking and acting has enabled us, in spite of many disadvantages, to take the lion's share in the great practical advances in medicine. Three among the greatest scientific movements of the century have come from Germany and France. Bichât, Lænnec and Louis laid the foundation of modern clinical medicine; Virchow and his pupils of scientific pathology; while Pasteur and Koch have revolutionized the study of the causes of disease; and yet, the modern history of the art of medicine could almost be written in its fullness from the records of the Anglo-Saxon race. We can claim almost every practical advance of the very first rank—vaccination, anæsthesia, preventive medicine and antiseptic surgery, the "captain jewels in the carcanet" of the profession, beside which can be placed no others of equal lustre.

One other lesson of Sydenham's life needs careful conning. The English Hippocrates, as I said, broke with authority. His motto was:

"Thou nature art my goddess; to thy law
My services are bound."

Undue reverence for authority as such, a serene satisfaction with the *status quo* and a fatuous objection to change have often retarded the progress of medicine. In every generation, in every country,

there have been, and ever will be, *laudatores temporis acti*, in the bad sense of that phrase, not a few of them men in high places, who have lent the weight of a complacent conservatism to bolster up an ineffectual attempt to stay the progress of new ideas. Every innovator from Harvey to Lister has been made to feel its force. The recently issued life of Thomas Wakley is a running commentary on this spirit, against the pricks of which he kicked so hard and so effectually. But there are signs of a great change. The old universities and the colleges, once the chief offenders, have been emancipated, and remain no longer, as Gibbon found them, steeped in port and prejudice. The value of authority *per se* has lessened enormously, and we of Greater Britain have perhaps suffered as the pendulum has swung to the other extreme. Practice loves authority, as announced in "the general and perpetual voice of men." Science must ever hold with Epicharmus that a judicious distrust and wise scepticism are the sinews of the understanding. And yet the very foundations of belief in almost everything relative to our art rest upon authority. The practitioner cannot always be the judge; the responsibility must often rest with the teachers and investigators, who can only learn in the lessons of history the terrible significance of the word. The fetters of a thousand years in the treatment of fever were shattered by Sydenham, shattered only to be riveted anew. How hard was the battle in this century against the entrenched and stubborn foe! Listen to the eloquent pleadings of Stokes, pleading as did Sydenham, against authority, and against the bleedings, the purgings and sweatings of fifty years ago. "Though his hair be gray and his authority high, he is but a child in knowledge and his reputation an error. On a level with a child, so far as correct appreciation of the great truths of medicine is concerned, he is very different in other respects, his powers of doing mischief are greater; he is far more dangerous. Oh, that men would stoop to learn, or at least cease to destroy." The potency of human authority among the powers that be, was never better drawn than by the judicious Hooker in his section on this subject. "And this not only with 'the simpler sort,' but the learned and wiser we are, the more such arguments in some cases prevail with us. The reason why the simpler sort are moved with authority is the conscience of their own ignorance; whereby it cometh to pass that having learned men in admiration, they rather feared to dislike them than know wherefore they should allow and follow their judgments. Contrariwise with them that are skilful authority is much more strong and forcible; because they only are able to discern how just cause there is why to

some men's authority so much should be attributed. For which cause the name of Hippocrates (no doubt) were more effectual to persuade even such men as Galen himself than to move a silly empiric."*

Sydenham was called "a man of many doubts" and therein lay the secret of his great strength.

Turning now to the main question of the development of this British medicine in Greater Britain, I must at once acknowledge the impossibility of doing justice to it. I can only indicate a few points of importance and I must confine my remarks chiefly to the American part of Greater Britain. We may recognize three distinct periods corresponding to three distinct waves of influence, the first from the early immigration to about 1820, the second from about 1820 to 1860, and the third from about 1860 to the present time.

The colonial settlements were contemporaneous with the revival of medicine in England. Fellow-students of Harvey at Cambridge might have sailed in the *Mayflower* and the *Arbella*. The more carefully planned expeditions usually enlisted the services of a well trained physician, and the early records, particularly of the New England colonies, contain many interesting references to these college-bred men. Giles Firman, who settled in Boston in 1632, a Cambridge-man seems to have been the first to give instruction in medicine in the new world. The parsons of that day had often a smattering of physic, and illustrated what Cotton Mather called an "angelical conjunction." He says: "Even since the days of Luke, the Evangelist, skill in *physick* has been frequently professed and practised by Persons whose more declared Business was the study of Divinity." Firman himself, finding physic 'but a meane helpe,' took orders. These English physicians in the New England colonies were scholarly, able men. Roger Chillingworth, in Hawthorne's *Scarlet Letter*, has depicted them in a sketch of his own life: "Made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge, faithfully, too, for the advancement of human welfare, men, thoughtful for others, caring little for themselves, kind just, true, and of constant if not warm affections,"—a singularly truthful picture of the old colonial physician.

Until the establishment of medical schools, University of Pennsylvania, 1763; King's College (afterwards Columbia) 1767; Harvard, 1782, the supply of physicians for the colonies came from Great Britain, supplemented by men trained under the old apprentice system, and of colonists who went to Edinburgh, Leyden and London

* *Ecclesiastical Polity*. Book ii., vii. 2.

for their medical education. This latter group had a most powerful effect in moulding professional life in the pre-revolutionary period. They were men who had enjoyed not alone the instruction but often the intimate friendship of the great English and European physicians. Morgan, Rush, Shippen, Bard, Wistar, Hossack and others had received an education comprising all that was best in the period, and had acquired the added culture which only comes from travel and wide acquaintance with the world. Morgan, the founder of the medical school of the University of Pennsylvania, was away seven years, and before returning had taken his seat as a corresponding member of the French Academy of Surgery, besides having been elected a Fellow of the Royal Society. The war of Independence interrupted temporarily the stream of students, but not the friendship which existed between Cullen and Fothergill and their old pupils in America. The correspondence of these two warm friends of the colonies testifies to the strong professional intimacy which existed at the time between the leaders of the profession in the old and new worlds.

But neither Boerhaave, Cullen nor Fothergill stamped colonial medicine as did the great Scotchman, John Hunter. Long, weary centuries separated Harvey from Galen; not a century elapsed from the death of the great physiologist to the advent of the man in whose phenomenal personality may be seen all the distinctive traits of modern medicine, and the range of whose mighty intellect has had few, if any, equals since Aristotle. Hunter's influence on the profession of this continent, so deep and enduring, was exerted in three ways. In the first place, his career as an army surgeon, and his writings on subjects of special interest to military men, carried his work and ways into innumerable campaigns in the long French wars and in the war of Independence. Hunter's works were reprinted in America as early as 1791 and 1793. In the second place, Hunter had a number of most distinguished students from the colonies, among whom were two who became teachers of wide reputation. William Shippen, the first Professor of Anatomy in the University of Pennsylvania, lived with Hunter on terms of the greatest intimacy. He brought back his methods of teaching and some measure of his spirit. With the exception of Hewson and Home, Hunter had no more distinguished pupil than Philip Syng Physick, who was his house surgeon at St. George's Hospital, and his devoted friend. For more than a generation Physick had no surgical compeer in America, and enjoyed a reputation equalled by no one save Rush. He taught Hunterian methods in the largest medical school in the country, and the

work of his nephew (Dorsey) on Surgery is very largely Hunter modified by Physick. But in a third and much more potent way the great master influenced the profession of this continent. Hunter was a naturalist to whom pathological processes were only a small part of a stupendous whole, governed by law, but which could never be understood until the facts had been accumulated, tabulated and systematized. By his example, by his prodigious industry and by his suggestive experiments he led men again into the old paths of Aristotle, Galen, and Harvey. He made all thinking physicians naturalists, and he lent a dignity to the study of organic life, and re-established a close union between medicine and the natural sciences. Both in Britain and Greater Britain he laid the foundation of the great collections and museums, particularly those connected with the medical schools. The Wistar-Horner and the Warren museums originated with men who had been greatly influenced by Hunter. He was, moreover, the intellectual father of that interesting group of men on this side of the Atlantic who, while practising as physicians, devoted much time and labor to the study of natural history. In the latter part of the last century and during the first thirty years of this, the successful practitioner was very often a naturalist. I wish that time permitted me to do justice to the long list of men who have been devoted naturalists and who have made contributions of great value. Benjamin Smith Barton, David Hossack, Jacob Bigelow, Richard Harlan, John D. Goodman, Samuel George Morton, John Collins Warren, Samuel L. Mitchell, J. Aiken Meigs, and many others, have left the records of their industry in their valuable works and in the transactions of the various societies and academies. In Canada, many of our best naturalists have been physicians, and collections in this city testify to the industry of Holmes and McCullough.

I was regretting the *humanities* a few minutes ago, and now I have to mourn the almost complete severance of medicine from the old natural history. To a man the most delightful recollections of whose student life are the Saturdays spent with a preceptor who had a Hunterian appetite for specimens—anything from a trilobite to an acarus—to such a one across the present brilliant outlook comes the shadow of the thought that the conditions of progress will make impossible again such careers as those of William Kitchen Parker and William Carmichael McIntosh.

Until about 1820 the English profession of this continent knew little else than British medicine. After this date in the United States the ties of professional union with the old country became

relaxed, owing in great part to the increase in the number of home schools, and in part to the development of American literature. To 1820 one hundred and fourteen native medical books of all kinds had been issued from the press, and one hundred and thirty-one reprints and translations, the former English, the latter, few in number, and almost exclusively French (Billings).

Turning for a few minutes to the condition of the profession in Canada during this period, I regret that I cannot speak of the many interesting questions relating to the French colonies. With the earliest settlers physicians had come, and among the Jesuits, in their devoted missions, there are records of *donnés* (laymen attached to the service), who were members of the profession. One of these, René Goupil, suffered martyrdom at the hands of the Iroquois.*

Between the fall of Quebec in 1759 and 1820, the English population had increased by the settlement of Upper Canada, chiefly by United Empire loyalists from the United States, and after the war of 1812 by settlers from the old country. The physicians in the sparsely settled districts were either young men who sought their fortunes in the new colony, or were army surgeons who had remained after the revolutionary war or the war of 1812. The military element gave for some years a very distinctive stamp to the profession. These surgeons were men of energy and ability, who had seen much service, and were accustomed to order, discipline, and regulations. Sabine, in his "History of the Loyalists," refers to the Tory proclivities of the doctors, but says that they were not so much disturbed as the lawyers and clergymen. Still, a good many of them left their homes for conscience sake, and Canniff, in his "History of the Profession in Upper Canada," gives a list of those known to have been among the United Empire Loyalists.

*Parkman. Jesuits in North America.

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BRITISH MEDICINE IN GREATER BRITAIN.

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(Continued from page 702.)

THE character of the men who controlled the profession of the new colony is well shown by the proceedings of the Medical Board which was organized in 1819. Drs. Macaulay and Widmer, both army surgeons, were the chief members. The latter, who has well been termed the father of the profession in Upper Canada, a man of the very highest character, did more than any one else to promote the progress of the profession; and throughout his long career his efforts were always directed to the proper channels. In looking through Canniff's most valuable work one is much impressed by the sterling worth and mettle of the old army surgeons who in the early days formed the larger part of the profession. The

minutes of the Medical Board indicate with what military discipline the candidates were examined, and the percentage of rejections has probably never been higher in the history of the province than it was in the first twenty years of the existence of the Board.

One picture on the canvas of those early days lingers in the memory, illustrating all the most attractive features of a race which has done much to make this country what it is to-day. Widmer was the type of the dignified old army surgeon, scrupulously punctilious and in every detail regardful of the proprieties of life. "Tiger" Dunlop may be taken as the very incarnation of that restless, roving spirit which has driven the Scotch broadcast upon the world. After fighting with the Connaught Rangers in the war of 1812, campaigning in India, clearing the Sangur of tigers—hence his soubriquet, "Tiger"—lecturing on medical jurisprudence in Edinburgh, writing for Blackwood, editing the *British Press* and the *Telescope*, introducing Beck's Medical Jurisprudence to English readers, and figuring as director and promoter of various companies, this extraordinary character appears in the young colony as "Warden of the Black Forest" in the employ of the Canada Company. His life in the backwoods at Gairbraid, his *Noctes Ambrosianæ Canadensis*, his famous "Twelve apostles," as he called his mahogany liquor stand (each bottle a full quart), his active political life, his remarkable household, his many eccentricities—are they not all portrayed to the life in the recently issued *In the days of the Canada Company!*

Turning now to the second period, we may remark in passing that the 19th century did not open very auspiciously for British medicine. Hunter had left no successor, and powerful as had been his influence it was too weak to stem the tide of abstract speculation with which Cullen, Brown and others flooded the profession. No more sterile period exists than the early decades of this century. Willan (a great naturalist in skin diseases), with a few others saved it from utter oblivion. The methods of Hippocrates, of Sydenham, and of Hunter had not yet been made available in everyday work.

The awakening came in France, and such an awakening! It can be compared with nothing but the renaissance in the 16th and 17th centuries, which gave us Vesalius and Harvey. "Citizen" Bichât and Broussais led the way, but Lænnec really created clinical medicine as we know it to-day. The discovery of auscultation was only an incident, of vast moment it is true, in a systematic study of the correlation of symptoms with anatomical changes. Louis, Andral and Cheomel extended the reputation of the French school which was maintained to the full until the sixth decade, when the brilliant

Trouseau ended for a time a long line of Paris teachers, whose audience had been world-wide. The revival of medicine in Great Britain was directly due to the French. Bright and Addison, Graves and Stokes, Forbes and Marshall Hall, Latham and Bennett were profoundly affected by the new movement. In the United States Anglican influence did not wane until after 1820. Translations of the works of Bichat appeared as early as 1802, and there were reprints in subsequent years, but it was not until 1823 that the first translation (a reprint of Forbes' edition) of Lænnec was issued. Broussais' works became very popular in translations after 1830, and in the journals from this time on the change of allegiance became very evident. But men rather than books diverted the trend of professional thought. After 1825 American students no longer went to Edinburgh and London, but to Paris, and we can say that between 1830 and 1860 every teacher and writer of note passed under the Gallic yoke. The translations of Louis' works and the extraordinary success of his American pupils, a band of the ablest young men the country had ever seen, added force to the movement. And yet this was a period in which American medical literature was made up largely of printed English books, and the systems, encyclopædias and libraries, chiefly reprints, testify to the zeal of the publishers. Stokes, Graves, Watson, Todd, Bennett and Williams furnished Anglican pap to the sucklings, as well as strong meat to the full grown. In spite of the powerful French influence, the text books of the schools were almost exclusively English.

In Canada, the period from 1820 to 1860 saw the establishment of the English universities and medical schools. In Montreal the agencies at work were wholly Scotch. The McGill Medical School was organized by Scotchmen, and from its inception has followed closely Edinburgh methods. The Paris influence, less personal, was exerted chiefly through English and Scotch channels. The Upper Canada schools were organized by men with English affiliations, and the traditions of Guy's, St. Bartholomew's, St. Thomas', St. George's, and of the London Hospital, rather than those of Edinburgh, have prevailed in Toronto and Kingston.

The local French influence on British medicine in Canada has been very slight. In the early decades of the century, when the cities were smaller, and the intercourse between the French and English somewhat closer, the reciprocal action was more marked. At that period English methods became somewhat the vogue among the French ; several very prominent French Canadians were Edinburgh graduates. Attempts were made in the medical journals to

have communications in both languages, but the fusion of the two sections of the profession was no more feasible than the fusion of the two nationalities, and the development has progressed along separate lines.

The third period dates from about 1860, when the influence of German medicine began to be felt. The rise of the Vienna school was for a long time the only visible result in Germany of the French renaissance. Skoda, the German Lænnec, and Rokitansky, the German Morgagni, influenced English and American thought between 1840 and 1860, but it was not until after the last date that Teutonic medicine began to be felt as a vitalizing power, chiefly through the energy of Virchow. After the translation of the "Cellular Pathology" by Chance (1860) the way lay clear and open to every young student who desired inspiration. There had been great men in Berlin before Virchow, but he made the town on the Spree a Mecca for the faithful of all lands. From this period we can date the rise of German influence on the profession of this continent. It came partly through the study of pathological histology, under the stimulus given by Virchow, and partly through the development of the specialties, particularly diseases of the eye, of the skin, and of the larynx. The singularly attractive courses of Hebra, the organization on a large scale in Vienna of a system of graduate teaching designed especially for foreigners, and the remarkable expansion of the German laboratories combined to divert the stream of students from France. The change of allegiance was a deserved tribute to the splendid organization of the German universities, to the untiring zeal and energy of their professors, and to their single-minded devotion to science for its own sake.

In certain aspects the Australasian Settlements present the most interesting problems of Greater Britain. More homogenous, thoroughly British, isolated, distant, they must work out their destiny with a less stringent environment than, for example, surrounds the English in Canada. The traditions are more uniform and of whatever character have filtered through British channels. The professional population of native-trained men is as yet small, and the proportion of graduates and licentiates from the English, Scotch, and Irish colleges and boards guarantees a dominance of old country ideas. What the maturity will show cannot be predicted, but the vigorous infancy is full of crescent promise. On looking over the files of Australian and New Zealand journals, one is impressed with the monotonous similarity of the diseases in the antipodes to those of Great Britain and of this continent. Except in the matter of par-

asitic affections and snake-bites, the nosology presents few distinctive qualities. The proceedings of the four Intercolonial Congresses indicate a high level of professional thought. In two points Australia has not progressed as other parts of Greater Britain. The satisfactory regulation of practice, so early settled in Canada, has been beset with many difficulties. Both in the United States and in Australia the absence of the military element, which was so strong in Canada, may in part at least account for the great difference which has prevailed in this matter of the state licence. The other relates to the question of ethics, to which one really does not care to refer, were it not absolutely forced upon the attention in reading the journals. Elsewhere professional squabbles, always so unseemly and distressing, are happily becoming very rare, and in Great Britain, and on this side of the water, we try at any rate "to wash our dirty linen at home." In the large Australian cities, differences and dissensions seem lamentably common. Surely they must be fomented by the atrocious system of elections to the hospitals, which plunges the entire profession every third or fourth year into the throes of a contest, in which the candidates have to solicit the suffrages of from 2,000 to 4,000 voters! Well, indeed, might Dr. Batchelor, in his address at the fourth Intercolonial Congress, say: "It is a scandal that in any British community, much less in a community which takes pride in a progressive spirit, such a pernicious system should survive for an hour."

Of India, of "Vishnu-land," what can one say in a few minutes? Three thoughts at once claim recognition. Here in the dim dawn of history, with the great Aryan people, was the intellectual cradle of the world. To the Hindoos we owe a debt which we can at any rate acknowledge; and even in medicine, many of our traditions and practices may be traced to them, as may be gathered from that most interesting "History of Aryan Medical Science," by the Thakore Saheb of Gondal.

Then there arises the memory of the men who have done so much for British medicine in that great empire. Far from their homes, far from congenial surroundings, and far from the stimulus of scientific influences, Annesley, Ballingall, Twining, Morehead, Waring, Parkes, Cunningham, Lewis, Vandyke, Carter, and many others, have upheld the traditions of Harvey and of Sydenham. On the great epidemic diseases how impoverished would our literature be in the absence of their contributions! But then there comes the thought of "the little done, the undone vast," when one considers the remarkable opportunities for study which India has pre-

sented. Where else in the world is there such a field for observation in cholera, leprosy, dysentery, the plague, typhoid fever, malaria, and in a host of other less important maladies. And what has the British Government done towards the scientific investigation of the diseases of India? Until recently, little or nothing, and the proposal to found an institute for the scientific study of disease has actually come from the native chiefs! The work of Dr. Hankin and of Professor Haffkine, and the not unminged evil of the brisk epidemic of plague in Bombay, may arouse the officials to a consciousness of their shortcomings. While sanitary progress has been great as shown in a reduction of the mortality from 69 per mille before 1857 to 15 per mille at present, many problems are still urgent, as may be gathered from reading Dr. Harvey's Presidential address and the proceedings of the Indian Medical congress. That typhoid fever can be called the "scourge of India" and that the incidence of the disease should remain so high among the troops point to serious sanitary defects as yet unremedied. As to the prevalence of venereal disease among the soldiers—an admission of nearly 500 per mille tells its own tale. On reading the journals and discussions one gets the impression that matters are not as they should be in India. There seems to be an absence of proper standards of authority. Had there been in each presidency during the past twenty years well-equipped government laboratories in charge of able men, well trained in modern methods, the contributions to our knowledge of epidemic diseases might have been epoch-making, and at any rate we should have been spared the crudeness which is evident in the work (particularly in that upon malaria) of some zealous but badly-trained men.

In estimating the progress of medicine in the countries comprising Greater Britain, the future rather than the present should be in our minds. The strides which have been taken during the past twenty years are a strong warrant that we have entered upon a period of exceptional development. When I see what has been accomplished in this city in the short space of time since I left, I can scarcely credit my eyes; the reality exceeds the utmost desire of my dreams. The awakening of the profession in the United States to a consciousness of its responsibilities and opportunities has caused unparalleled changes, which have given an impetus to medical education and to higher lines of medical work which has already borne a rich harvest. Within two hundred years who can say where the intellectual centre of the Anglo-Saxon race will be? The Mother Country herself has only become an intellectual nation of the first

rank within a period altogether too short to justify a prediction that she has reached the zenith. She will probably reverse the history of Hellas, in which the mental superiority was at first with the colonies. At the end of the next century, ardent old-world students may come to this side "as o'er a brook," seeking inspiration from great masters, perhaps in this very city; or the current may turn towards the schools of the great nations of the south. Under new and previously unknown conditions, the Africander, the Australian, or the New Zealander may reach a development before which even "the glory that was Greece" may pale. Visionary as this may appear, it is not one whit more improbable to-day than would have been a prophecy made in 1797 that such a gathering as the present would be possible within a century on the banks of the St. Lawrence.

Meanwhile, to the throbbing vitality of modern medicine the two great meetings held this month, in lands so widely distant, bear eloquent testimony. Free, cosmopolitan, no longer hampered by the dogmas of schools, we may feel a just pride in a profession almost totally emancipated from the bondage of error and prejudice. Distinctions of race, nationality, color and creed are unknown within the portals of the temple of Æsculapius. Dare we dream that this harmony and cohesion so rapidly developing in medicine, obliterating the strongest lines of division, knowing no tie of loyalty but loyalty to truth—dare we hope, I say, that in the wider range of human affairs a similar solidarity might ultimately be reached? Who can say that the forges of time will weld no links between man and man stronger than those of religion or of country? Some Son of Beor, touched with prophetic vision, piercing the clouds which now veil the eternal sunshine of the mountain top—some spectator of all time and all existence (to use Plato's expression)—might see in this gathering of men of one blood and one tongue a gleam of hope for the future, of hope at least that the great race so dominant on the earth to-day may progress in the bonds of peace—a faint glimmer perhaps of the larger hope of humanity, of the day when "the common sense of most shall hold a fretful world in awe." There remains for us, Greater Britons of whatsoever land, the bounden duty to cherish the best traditions of our fathers, and particularly of the men who gave to British medicine its most distinctive features, of the men, too, who found for us the light and liberty of Greek thought—Linacre, Harvey, and Sydenham, those ancient founts of inspiration and models for all time in Literature, Science, and Practice.

TREATMENT OF GASTRO INTESTINAL CATARRH.*

BY DR. H. D. LIVINGSTONE,
ROCKWOOD.

IN presenting the accompanying paper—the treatment of acute gastro intestinal catarrh in infancy—I limit the term to those cases of intestinal derangement occurring most frequently in children under the age of two years, and confined chiefly to the summer months.

I think a more or less common error, especially among the younger practitioners, is a failure to attach due importance to this branch of pædiatrics, and, in overlooking the fact that we are dealing with an extremely delicate organization in the infant, to modify the treatment on the plans most commonly observed in adult cases.

Although of a very susceptible constitution and prone to the contraction of disease, the child, on the other hand, possesses great elasticity, and it is this very sensitiveness to surrounding influences, which forms in our prognosis a potent factor for good or evil, as readily responding to proper management as to succumb to injudicious measures of treatment.

On considering the most recent views on the etiology of this affection, it becomes evident that the cause is of a toxic nature, some bacteria probably being ingested with food, others produced as the result of its decomposition, and a few which are no doubt always present in the intestine, awaiting only a condition of lowered vitality and perverted secretion to excite an acute diarrhoea.

Without doubt, in the large majority of cases, the disease is, in its primary stage, a condition of gastric indigestion, perhaps at first scarcely noticeable, but gradually leading to those fermentive changes in the stomach contents which originate the trouble.

The direct cause in many cases, can be traced, not so much to the influence of great heat, or to the ingestion of contaminated food, as to the habit of indiscriminate feeding in children under two years of age, and I have frequently found on enquiry from the parent, that previous to an attack, the child had committed some gross indis-

*Read before the Ontario Medical Association, Toronto, June, 1897.

cretion in this direction, simply from the fact of being allowed to partake, and often in excessive quantity, of everything which appears on the table. Under such circumstances it is not hard to understand how the delicate and undeveloped stomach of the child should revolt, sooner or later, against a diet totally out of proportion to its powers of digestion, and capable of exciting a diarrhoea which is often both toxic and mechanical in its nature.

The above facts direct attention to the most common cause of this intestinal affection in children and to a consideration of the remedies in vogue for its cure.

Of medicinal agents there are probably none so harmful in effect and yet so frequently and carelessly administered as opium.

If we accept the almost universal view that the summer diarrhoea of infants is toxic in character, we are defeating our own ends in giving opium at all except as a last resort. The tendency in this affection is nearly always towards natural recovery, the frequent movement of the bowels simply an effort to rid themselves of irritant material, and why should we retard that object?

The evil effects of opium are evidenced in many ways. By its stimulating effects on the inhibitory fibres of the splanchnic nerves it lessens intestinal action, allowing the retention of decomposition products, and accumulation and absorption into the general circulation of toxic material. At the same time it of necessity disorders digestion in the stomach, which is already deranged, for be the dose however small, if it is sufficient to produce any constipating effect on the intestines it must also indirectly influence the stomach. In addition to this, if given in overdose, or its use continued too long, it paralyzes the inhibitory fibres of the splanchnics, and as a result of the withdrawal of the natural restraining influence on the intestinal walls, increased peristalsis ensues, and an aggravated condition of the original trouble is produced. Thus in the administration of opium, not only are we combatting the natural effort on the part of the gastro-intestinal tract to rid itself of foreign and irritating material, but we lock up the secretions of those glands whose duty it is to provide juices which are necessary for intestinal digestion, and for a medium antagonistic to the development of bacteria.

It may be argued that opium might be justifiably used in small doses, provided evacuation and cleanliness of the bowels have been secured. Even with initial catharsis and thorough irrigation of the tract, can we be sure that some irritating material has not remained, to find the most favorable possible ground for toxic development, in the condition of arrested motion of the bowels induced by the exhibition of opium?

Considering the extreme susceptibility of infants to the use of this drug, it would certainly appear distinctly contra-indicated under the above conditions, and if used at all, reserved only for the most severe cases, characterized by the continuance of much pain and frequent watery movements, and even then would stimulants not be more beneficial? It should decidedly not be used unless strict evacuation and irrigation of the bowel has preceded it, and then never in composition, but always alone and in small repeated doses, that its effects may be more carefully watched.

Many other medicinal agents are recommended and used as routine treatment, the essential oils, astringents, etc. On what ground is their efficacy based? Apart from the irritating effect many of them possess, their action does not seem to meet the indications in the present case.

Perhaps the only astringent drug which is really of service in this connection is bismuth, which also possesses sedative qualities and may be safely used, when required, in fairly large and repeated doses.

In considering the foregoing remarks, and viewing the disease as toxic in character—chiefly due to disordered function—the main therapeutic indications which suggest themselves appear to be :

Elimination, antiseptis, perfect digestion.

Elimination claims the first attention. By it we endeavor to assist Nature in her effort to expel offending material from the gastrointestinal tract. Once decomposition and fermentation start in food and the digestive functions in abeyance, and we have all the conditions necessary for a perfect culture medium for germs. If we can hope to at once sweep out this irritating substance, and, by allowing the stomach and bowels as complete rest as possible, to restore digestion, at the same time endeavoring to keep the tract fairly antiseptic, we may reasonably look for natural recovery. Some cases point directly to the occurrence of an attack, following the ingestion of food known to have been irritating or unsuitable. Prompt emesis in these instances will frequently be followed with good results, and serve to shorten an otherwise tedious attack. In all severe cases, whatever the cause, much benefit will be experienced from thorough irrigation of the colon.

As an initial cathartic, calomel would appear to possess decided advantages. It is usually well borne by the stomach. It aids digestion, stimulates the glands to activity, thereby tending to restore their tone and is known to possess decided antiseptic properties.

In considering antiseptis in this connection, calomel again may

be said to hold an equal, if not superior, position to others commonly employed. Recent authorities appear to agree in the opinion that we have no reliable intestinal antiseptic, and mercury in some form has the additional advantage that it stimulates the flow of bile, the natural antiseptic of the bowels, that its effects may be continued in small doses after the initial catharsis has been produced, and while exerting its antiseptic properties tends to maintain a certain amount of movement which is necessary for the expulsion of foreign products.

This brings us to the consideration of digestives. During the first twelve or twenty-four hours of an ordinary attack complete rest should be allowed the stomach, nothing in the way of nourishment being permitted except plenty of boiled water and small amounts of such articles as either whey, albumen water, barley water, or freshly-expressed, home-prepared beef juice. After this interval it becomes necessary in most cases, especially if the attack appears likely to be a prolonged one, to administer some more nourishing food, and at the same time a medicinal aid to its digestion. Some preparation containing pepsin and hydrochloric acid in combination meets the latter requirement, and may be obtained in different attractive and palatable forms.

The importance of at once securing as perfect digestion as possible is paramount when we consider the frequent tendency that this affection has, if mismanaged, to merge into an inflammatory condition of the lower bowel, or, to be the forerunner of cholera-infantum.

In preparing the foregoing paper I have endeavored merely to outline the treatment of those more important indications which the etiology appears to suggest, and which are often abused by the indiscriminate use of harmful drugs.

DECIDUOMA MALIGNUM.

By J. C. WEBSTER, M.D. EDIN., F.R.C.P.E., F.R.S.E.

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IN 1888 Sanger, of Leipsic, introduced this term to apply to two cases in which, after abortion, soft, spongy tumors developed in the uterus, with metastases in the lungs, ribs and other parts, and believed by him to belong to the sarcoma group. Since that time a considerable number of cases have been described, but owing to the varying nature of the accounts there is the greatest confusion as to the nature and origin of the growth. At the present time the views which exist may be stated as follows:

Relationship to Pregnancy.—These cases have been described as occurring within a few days, weeks or months after full-time labor, abortion, hydatid mole, ectopic gestation. A large proportion have been described in relation especially to hydatid mole. It is possible that in some cases the primary growth may begin to grow before the pregnancy is ended. The condition has been found at all periods of the sexual life, the largest proportion having been between the ages of 20 and 30.

Clinical Features.—Hæmorrhage from the uterus is usually the first and most marked symptom. It occurs irregularly. The uterus is enlarged by the soft growth of the mucosa, which may affect the thickness of the whole wall. After curetting of the mass rapid return is usual. The rapid development of metastases is a prominent feature. They are most frequent in the lungs; common in the vagina; and may occur in other parts, *e. g.*, ribs, iliac fossa. The disease progresses rapidly and death usually takes place within six months of the appearance of symptoms.

Pathology.—There is the greatest discordance of opinion as to the pathology of this condition. By some the growth has been described as carcinoma, by others, as sarcoma, and by others, as a mixture of carcinoma and sarcoma.

As to the starting point, some cases are described as maternal in origin, either from epithelial, connective tissue or muscular elements; others are described as foetal, either from the epithelium or connective tissue of the chorionic villi, or from both; and others are described as a mixture of foetal and maternal elements.

From a careful examination of the literature it appears that the cases may be divided into the following groups:

1. Those in which the primary growth and metastases are composed of cells of sarcomatous, carcinomatous or mixed sarcomatous and carcinomatous types.

2. Those in which the structure is that found in group 1, along with syncytial structures, irregularly shaped masses of nucleated plasmodial protoplasm.

3. Those in which the structure is that found in group 2, along with structures resembling placental villi.

Group 1. In regard to group 1 very little need be said, except to point out that the difficulty of deciding as to the carcinomatous or sarcomatous nature of some malignant uterine growths is much older than the discovery of deciduoma malignum, and has been pointed out in connection with the uterus apart from the influence of pregnancy as well as in connection with it. Virchow, Hegar, Gusserow, Klebs and others have referred to this point, and the latter author was so impressed with the tendency of these growths to occur together in the corpus uteri that he proposed to call them by the term *carcinosarcoma*. The difficulty of establishing their histological nature will be increased by the complication of the influence of pregnancy.

Should the growth occur soon after delivery, the remains of the decidual tissue and of glandular elements may present appearances exceedingly hard to interpret correctly; moreover, it is to be remembered that normally the range of variation in the structure of the mucosa in pregnancy and after delivery is considerable. (*Vide* my investigations on the changes in the uterine mucosa during pregnancy, and in the attached foetal structures, described in the *Amer. Gyn. and Obstet. Journ.*, 1897.) The chief feature of these tumors is the large type of the cells which compose it. Now, it is to be noted, that everywhere else in the body rapidly-growing sarcoma is of the small-celled variety. When sarcomata develop in the uterus of a woman who has not been pregnant, or in whom pregnancy has not taken place for a long time, there is no tendency to the formation of large cells.

It is evident, then, that this is a characteristic related to pregnancy and the explanation is probably as follows: The genetic

influence which is due to fertilization, and which in the beginning of pregnancy leads to the formation of a decidua, is probably not lost for a considerable while after pregnancy, and may be so excited by the irritation of a new growth that the connective tissue elements multiply and take on that development to which they are physiologically peculiarly disposed, viz, the formation of cells of large size. This will probably be all the more noticeable when the new growth is one developing in connection with the connective tissue elements. The occurrence of large cell formation in the inter-glandular tissue of the uterine mucosa has not been noted where the influence of a pregnancy does not come into play. Thus in Overlach's phosphorus poisoning and in Ruge's endometritis case where large cells were found, the influence of a past abortion could not be excluded. Such cases prove that the genetic influence may extend for many weeks after labor; and we already know that it may act at a distance because decidual formation may take place in the uterus when fertilization occurs in one tube, or it may occur in the opposite non-pregnant tube, as I have shown by my researches in ectopic pregnancy.

It is not, therefore, remarkable that sarcomatous (or carcinomatous) changes in the uterine mucosa, which has recently been submitted to the influence of pregnancy, may be marked by the formation of cells of a large or decidual type; and it seems to me unnecessary to apply the term "deciduoma malignum" to this group. As regards the rapidity of growth, it has long been known that this is a special characteristic of malignant growths of the uterus developing in the puerperium—very possibly related to the weakened condition of the woman in association with the profound changes which have occurred in the body metabolism.

Group 2. In this group, of which the case published by Whitridge Williams may be taken as a type, besides the large, malignant, decidua-like cells which compose the great part of the tumor, there are masses of syncytium, varying in size and shape, though often in bands composed of granular, nucleated protoplasm—plasmodial in appearance, and vacuolated in different parts. Sometimes the masses may be found burrowing through the walls of venous sinuses.

This structure is also found in the metastatic growths, where it may be more abundant and in more varied shapes than in the primary growth. Some of the masses exactly resemble sections of the early epiblastic buds found growing from the chorion in pregnancy. In the midst of the cells of the tumor, blood is found, though often no distinct vessels can be made out.

Regarding these growths, there is very great dispute, especially with regard to the syncytium. Some regard them as sarcomata or carcino-sarcomata of maternal origin. Kaulbach and others regard them as sarcomatous developments of the connective tissue of the mucosa, the syncytial masses being due to degeneration in the sarcomatous cells. Those who are opposed to this view state that the syncytium is too abundant and too distinct a formation to be accounted for in this way, and that no such marked appearances are ever seen in sarcoma occurring elsewhere in the body.

Others believe that these tumors are entirely of foetal origin, the decidua-like cells being derived either by sarcomatous changes in the mesoblastic core of the villi or by proliferation of the deep layer (Laughans') of the epiblastic covering of the villi; the syncytium being derived from the superficial layer of the epiblast, which is a syncytial structure.

Another view is to the effect that the tumors are made up of a mixture derived both from foetal and maternal sources.

The important feature of the tumors of this group are the syncytial masses. All observers are agreed upon their great resemblance to the syncytium normally found in the uterus in pregnancy. If it can be established that their formation is not due to degenerative processes in the sarcoma, but that they are identical with the syncytium of pregnancy, then it will be necessary to regard the growth as of undoubted foetal origin—an *epiblastoma*, if I may use the word. For there can now be no doubt that the syncytium of pregnancy is derived entirely from the outer portion of the epiblastic covering of the ovum. That it is not of maternal origin, the researches of Kastscheuko, myself, and others clearly show. It is found at first on the early ovum, from which it spreads to the surface of the decidua which is related to the chorion; it has trophoblastic powers, and can penetrate the decidua, reaching even into the muscular part of the wall; it opens the maternal sinuses in the serotina, and portions of it may be found free in the veins, and may be carried by the blood-current some distance from the uterus, even to the lungs.

It would not, therefore, appear to me marvellous if the foetal epiblast should sometimes overstep the normal range of its activity and take on malignant action. A dermoid cyst of the ovary is a tumor derived from the early epiblast, and it is widely recognized that, in case of rupture, it is very apt to set up secondary growths in the peritoneum as a result of infection by its epiblastic elements. These may become malignant.

Group 3. This is composed of cases in which the tumor has developed after a hydatid mole has been expelled from the uterus. The new growth and metastasis are, in some cases, composed entirely of masses of syncytium and of structures exactly resembling on section villi in various stages of development, *i.e.*, solid syncytial buds, vacuolated buds or rings of epiblast filled with mucoid tissue; in other cases, besides these elements, there are large cells which may possibly have originated from the deep layer (Laughans') of the epiblastic covering of the villi.

The appearances presented by the first of these classes are so very like those seen in microscopic sections of the placenta, both in uterine and ectopic gestation, that one is inclined to agree with Klebs in regarding the new growth as a case of foetal parasitism due to malignant changes in foetal remains left in the uterus.

Selected Articles.

ULCERS FROM AN EXTENSIVE BURN TREATED WITH BOVININE.

BY F. R. BLANCHARD, M.D.,

LAKEVIEW, MICH

ON the morning of April 28, 1897, I was called to see W.T.B., aged forty-three years, engineer in a stave factory, who had been injured by the explosion of the mud drum. I saw him an hour after the accident and found him suffering intense pain, and wildly delirious.

Whisky had been administered to overcome the shock, and three eighth-of-a-grain morphine pills to relieve the pain. I immediately gave a hypodermic of morphine, a quarter of a grain, and atropine, one one hundred and fiftieth of a grain, which soon quieted him, and then examined his injuries, finding the following conditions: Upper extremities severely burned about the face, neck, and upper portion of the chest, the left eye, ear, and nose being most severe; left arm, at elbow, wrist, and entire hand; right arm at wrist. Lower extremities: right buttock, over one half of the surface; right leg on the patella, calf and ankle; left buttock, thigh and leg, over the whole posterior surface, patella, and a strip two inches wide running nearly around the ankle.

The burns were all of the second degree and healed without sloughing, except on the left calf and ankle.

The appearance of the left eye was bad, the cornea being cloudy, and my prognosis was guarded, but the eye afterward cleared up and sight is normal.

I dressed the wounds with limewater and linseed oil, equal parts, applying it on old linen cloths saturated with the mixture, and covering it with wadding obtained at a dry-goods store.

In the evening, when I changed the dressings, I found vesicles and large bullæ had formed containing clear serum, the largest to

the amount of four ounces, all of which I punctured, removing all loose strips and hanging folds of epidermis.

The limewater and linseed-oil dressing was used four days and then discontinued, a dressing of plain vaseline being substituted. As soon as pus began to form the wounds were thoroughly cleansed with corrosive-sublimate solution (1 to 3,000), using small pledgets of absorbent cotton, then dusted with acetanilide and boric acid, equal parts, applied with a pepper duster, and the vaseline dressing applied; dressing changed every twenty-four hours.

The corrosive sublimate solution seeming to cause too much irritation, I changed to two per cent. carbolic acid solution, which worked admirably.

The eyes were treated with ice compresses, the pupils were kept fully dilated with atropine sulphate, and the following eye wash was ordered: \mathcal{R} acidi boric, sodii biborat., \overline{aa} \mathcal{D} j; aquae camph., aquæ, \overline{aa} \mathcal{Z} ij. \mathcal{M} .

The internal treatment was with morphine to quiet pain, and aconite when the pulse was too full and strong.

May 22nd.—Twenty-five days after the accident the wounds were all healed except those of the calf and ankle of the left leg; on the calf was an ulcer eight inches long by four inches wide, and on the ankle a strip two inches wide, running nearly around the leg, both having a very unhealthy appearance, with deeply cut edges. I concluded it would be necessary to try skin grafting, but wished first to get a healthy granulating surface. It was then I conceived the idea of treating it with bovine blood.

23rd.—I first cleansed the ulcers thoroughly with the carbolic solution, then saturated plain aseptic gauze with bovine and covered the ulcers; over this I put a layer of gutta-percha tissue, and covered the whole with wadding. The following morning when I removed the dressings there was no pus, and healthy pink granulations were springing up over the ulcers. I changed the dressings every twenty-four hours, and could see a rapid improvement each time, the new skin extending in more and more from the edges. Improvement was so rapid I concluded grafting would not be necessary, and continued the bovine dressings, dusting the new granulations with calomel if they became at all exuberant.

June 4th.—Twelve days after beginning these dressings the ulcers were entirely healed. I then put on a dressing of plain vaseline, applied a bandage, to be worn during the day as a support to the circulation, and discharged the case.

12th.—At this writing there are no signs of any remaining scars.

One thing noticeable with the blood treatment was the absence of pain. Before I used it the ulcers were very painful, but after applying the blood dressing there was immediate relief, and the patient experienced no more pain.—*N. Y. Medical Journal*.

MEDICAL LEGISLATION IN CANADA.

ONE of the most important subjects now being considered by the medical profession of Canada is, undoubtedly, that which refers to a uniform standard of medical education, and a common license for the whole Dominion. The subject is by no means new. At a meeting of the Canadian Medical Association held sixteen years ago in Halifax some informal discussions on inter-provincial registration took place, and those from the west, especially Ontario, were rather surprised to find that the profession in the maritime provinces held very pronounced views on the subject.

We intend to devote a considerable portion of this issue to the question of medical legislation in Canada, and will publish extracts from various papers and addresses written and delivered during the last five years, which will give a fair insight of the various aspects of a very complicated subject. In this province there has been displayed a certain amount of apathy, or indifference, about the matter, that is rather surprising, and has caused some strong expressions of disapprobation in other provinces both east and west of Ontario.

The Medical Council of this province has received a fair share of censure from various sources. Many members of that body have shown a decided interest in the subject, and a strong desire to find a solution of the numerous difficulties which exist; but, we fear, there is some reason for the opinion of many that the Council as a whole has shown very little interest in the matter. It was certainly unfortunate that at the recent conference, held in Montreal, Ontario was not prepared to present an official report of any description.

After many ineffectual efforts to get a meeting of representatives from all parts of the Dominion, a conference took place at Ottawa in September of 1892, during the meeting of the Canadian Medical Association, when the following resolutions were carried unanimously:

(1) "That in the opinion of this conference there should be in each province in Canada a central examining board to examine all candidates for medical registration therein.

(2) "That as soon as a central examining board is formed in each province a committee should be appointed from each provincial medical council in order to have established a uniform standard of matriculation and of medical education throughout Canada, and also reciprocity between the provinces in regard to medical registration."

It was supposed at that time that the principal obstacle existed in Quebec, where the universities were opposed to handing over their licensing powers to a central examining board. During the session of the Quebec Parliament—1891-2—a motion to establish such an examining board was defeated by a majority of one. We have no desire now to discuss the various aspects of the question in detail, but simply to give the views of various parties who have considered the matter more or less carefully. In the first place we will extract from the presidential address of Dr. Jno. L. Bray, of Chatham, delivered at the Ottawa meeting in 1892 :

DR. BRAY ON MEDICAL RECIPROCITY.

And this brings me to the second part of my subject, viz., the question of medical reciprocity between the provinces. In reading over the Medical Acts of the different provinces, I find that Ontario is the only one that has a central examining board appointed by the council, before whom every student desirous of practising in that province, no matter from what country he may come or from what university he may have a degree, has to pass. I further find in the Ontario Medical Act this clause: 'When and as soon as it appears that there has been established a central examining board similar to that constituted by this Act, or an institution duly recognized by the legislature of any of the provinces forming the Dominion of Canada, other than Ontario, as the sole examining body for the purpose or granting certificates of qualification, and wherein the curriculum is equal to that established in Ontario, the holder of any such certificate shall, upon due proof, be entitled to registration by the Council of Ontario if the same privilege is accorded by such examining board or institution to those holding certificates in Ontario.

I find in the Manitoba Medical Act that the University of Manitoba is the sole examining body for the province, and in that respect comes nearer to the requirements of Ontario than any other and I see no reason why as long as this remains so reciprocity should not exist between Manitoba and Ontario. Now it appears to me there are just two ways whereby reciprocity between the provinces can be brought about, and these are, first, the repeal of

that portion of the British North America Act which gives the various provinces sole control over all educational matters, by taking from them this right and vesting it in the Federal Government, and the appointment of a Dominion Medical Board ; or, secondly, the establishing of Medical Councils for each province, which shall appoint a Central Examining Board similar to that of Ontario, and when this is done let representatives from each provincial council meet, say, in Ottawa, and fix one uniform standard of medical studies to be adopted by all the provinces. Now, as to the first, I think it is entirely out of the question, and can be put aside as utterly impracticable, as I feel sure the local legislatures would never consent to have the control of the educational system taken out of their hands. As to the second proposition, I see no good reason why it should not be adopted. In all the Provincial Medical Acts, so far as I am aware, full power is given the councils to fix the periods of study, make their own curricula, and conduct their own examinations in the way which to them may seem best. Now, all the colleges and universities in the Dominion, so far as I can learn, require four full years of study from a student before going up for his degree, excepting those of British Columbia, whose council is satisfied with three. The teaching in all these institutions is very similar, so that it would not be a difficult task to make them uniform in this respect. Then all that remains to be done is to appoint a Central Medical Examining Board for each province, to examine and recommend for license all graduates, leaving the universities the power of granting degrees only.—CANADIAN PRACTITIONER.

THE OTTAWA MEETING.

After the committee brought in the report, to which we have previously referred, at the Ottawa meeting a short discussion took place, but no definite conclusion was reached. It was decided to make the committee somewhat larger and ask for a more extended report to be presented at the next meeting.

THE LONDON MEETING.

At the meeting held in London, Sept, 1893, the committee, in accordance with instructions received at Ottawa the previous year, presented a report in which it was proposed that a Dominion Medical Council be formed "to take general surveillance of the medical curriculum, and of all matters affecting the general public and profession of the whole Dominion," formed either by representatives (one each) from the members of the various provincial Medical Councils, or

elected by the medical population of Canada irrespective of provincial lines; or on the "line of the British Medical Council." Its duties should be the equilization of the medical curriculum to a just and high standard; to secure interprovincial reciprocity; to have the power to withhold or take away a Dominion license from a provincial graduate for just cause; to approve all provincial examination papers before they were presented to candidates. There should only be one examination for the provincial and Dominion licenses, and extra fee for the latter. If it followed the British Medical Council in its formation, the British Medical Council regulations should be operative as applicable to the Dominion. All men now on provincial registers to be entitled to Dominion registration within the year of the formation of the first Dominion Medical Council on payment of \$10. All practitioners outside of Canada and Great Britain would be allowed a Dominion license upon passing the prescribed examination. All those on the British register would be entitled to registration upon payment of \$25 as soon as Great Britain extended the same privilege to Canada. The committee further recommended that the association, through a committee, should present these views to the provincial councils, and by concerted action with them to apply at the next session of legislature for such permissive legislation as would be required to establish the powers and duties of the Dominion Medical Council. If any provincial council refused to accede to the demands of the general profession for these objects, that this association should instruct their delegates to go to the legislature of such province and secure the required concession.—CANADIAN PRACTITIONER.

This report was not considered satisfactory, and after a brief discussion was "tabled." After this there was but little done for a couple of years, although there were many complaints made, especially by practitioners in the maritime provinces, respecting the alleged hostility shown by the profession of Ontario to interprovincial reciprocity. At the meeting held in St. John, N.B., 1894, a new committee was appointed.

The Montreal Medical Journal contained the following editorial before the Kingston meeting:—

RECIPROCITY OR DOMINION REGISTRATION.

At the coming meeting in Kingston of the Canadian Medical Association a committee, appointed last year, will report on the important questions of reciprocity and Dominion Medical Registration. What the result will be, it is difficult to predict. Much

will depend on the humor of the delegates from the various provinces, comprising the committee. Judging from the tone of the discussion on this subject, at the meeting of the Ontario Medical Council, the other day, we fear that the representatives from that province will again demand more than those from the Province of Quebec at any rate will be prepared to grant. It will be a great pity if some definite understanding cannot be arrived at on these important questions. Reciprocity would answer the purpose for the present. There is already an understanding between Quebec and Manitoba, so that the licenses granted by the boards of these respective provinces allow candidates to practice in either without further trouble. Quebec and New Brunswick had a similar understanding, up to a short time ago, when some irregularities occurred, and they no longer reciprocate. Reciprocity would be specially desirable between the great provinces of Ontario and Quebec; both because of the larger population in these provinces, and the very great length of frontier line. Does it not seem absurd that a medical man cannot cross the River Ottawa, to attend an urgent call, and perhaps save a life, without making himself liable to arrest and fine? Such, however, occurs constantly, and must have the effect of lowering the profession in the estimation of the public, giving them the impression that we are a narrow-minded lot. It is not generally known that even between France and Germany—countries always most unfriendly in other respects—a neutral territory is established, extending for fifteen miles on either side of the boundary line, which can be traversed without molestation by medical men of either country in the discharge of their professional duties. Let us hope that the members of the committee referred to, and the Association generally, will meet this question in a loyal and fraternal spirit, so that some amicable and practical understanding may be arrived at.

Some form of Dominion medical registration, would, of course, be the ideal thing, but we fear that that must be delayed until reciprocity has been in operation long enough to satisfy the public and the authorities at Ottawa that we are united as a profession on this subject. The late Sir John Thompson is known to have held the opinion that, while in accordance with the British North America Act, all questions of education were relegated to the various provinces, it was possible to have a Dominion examining board and board of registration, providing only the profession representing the various provinces were unanimous in their presentation of the case to the government in power. This would not necessarily interfere

with provincial rights. Each province should, if so disposed, still have its own examining or licensing board, or both, for the purpose of examining and licensing candidates who were going to be satisfied to practice in the limited sphere of that province. More ambitious candidates would prefer the stiffer examination of the Dominion board ; but they would have the supreme advantage of being permitted to practice in any part of the British Empire. It is rather galling to the Canadian to find the Australian graduate in medicine settling in London without further examination by simply paying his registration fee. The Medical Council of Great Britain will give us the same privileges as soon as we shall have arranged some form of federal registration.—*Montreal Medical Journal*, August, 1895.

DOMINION MEDICAL REGISTRATION.

The following editorial appeared in THE CANADIAN PRACTITIONER, October, 1895 :—"It is unfortunate that the question of medical registration for the whole Dominion is surrounded by so many difficulties. The matter has frequently been discussed at meetings of the Canadian Association, as it is naturally supposed that that is the proper body to consider the question. It was hoped that the committee of this association which was appointed at the St. John, N. B. meeting in 1894, to consider and report on the question, would be able to do something in the way of removing the difficulties which prevent a satisfactory settlement of the whole matter. In the report presented, the members of the committee "expressed their regret that, by the system which at present obtains, a graduate in medicine entitled to practise in our province is not free to exercise his functions in all the provinces in this large but sparsely settled Dominion ; that this condition of things prevents the names of medical practitioners in this Dominion being placed on the British register, becoming thereby British practitioners. This latter is a boon which the council of Great Britain has more than once signified its willingness to grant. To secure these ends, it is considered most desirable that a uniform standard of medical education for the whole Dominion be established. In order to affect this purpose, it is suggested that the secretary be instructed to communicate with the various provincial councils before the next meeting, asking that each council discuss the position, and, if possible, appoint one or more delegates to a Dominion committee for the purpose of adjusting a suitable curriculum to carry out the suggestion herein, and that such committee be requested to forward its findings to the provincial

councils and to the secretary of the association before the next meeting."

This report is somewhat disappointing to those who hoped that the committee would have worked in the direction of communicating with the various provincial councils, instead of simply suggesting that something of this sort be done in the future. What we wanted to get from the committee was work, and not suggestions. We have been deluged with suggestions for some years; we want now to get one step farther.

The Montreal Medical Journal fears that the representatives of Ontario will demand more than those of Quebec will be prepared to grant. It also suggests that reciprocity would answer the purpose for the present, and states that such reciprocity now exists between Quebec and Manitoba. If Ontario and Quebec could agree, it is likely that the other provinces will fall into line. We think a good deal will depend on the attitude of the Ontario Medical Council, which, in the past, has not always shown a conciliatory disposition. We have reason to think, however, that a majority of the present council are anxious for reciprocity or Dominion registration, and will gladly confer with delegates from the other provinces, and assist in finding a solution of the many opposing difficulties."

INTER-PROVINCIAL REGISTRATION.

That vexed question, inter-provincial registration, which has occupied the earnest attention of the profession in Canada for nearly thirty years, was undoubtedly advanced a stage at the recent meeting of the Canadian Medical Association in Kingston. The following composed the committee appointed last year at the meeting in St. John to report on this question: Sir James Grant, Drs. Cameron and Pyne, from Ontario; Sir William Hingston, Drs. Marcil, Beau-soleil, Chalotte, Parke and Roddick, from Quebec; Drs. Bayard, Christie and White, from New Brunswick; Drs. Farrel and Muir, from Nova Scotia; and Dr. Warburton from Prince Edward Island. Two lengthy sessions of the committee were held, so that the matter was thoroughly discussed and the views obtained of the several representatives. No very definite scheme, however, resulted, but the following resolution was unanimously adopted for the guidance of the association:

"The committee appointed at the last meeting to look into the question of inter-provincial registration would beg to express their regret that by the system which at present obtains, a graduate in

medicine entitled to practise in one province is not free to exercise his functions in all the provinces of this large but sparsely settled Dominion ;

“ That this condition of things prevents the names of medical practitioners in this Dominion being placed on the British registers, becoming thereby British practitioners, which the Council of Medical Education of Great Britain has more than once signified its willingness to grant ;

“ That with this end in view it is, therefore, most desirable that there should be a uniform standard of matriculation, a uniform standard of medical education, and a uniform method of examination for the whole Dominion.

“ That to effect this purpose, the secretary be instructed to communicate with the various Provincial Councils, before their next meeting, asking that each Council discuss the question, and, if possible, appoint one or more delegates to a Dominion committee for the purpose of adjusting a suitable curriculum and carrying out the suggestions herein contained, and that such Committee be requested to forward their finding to each of the Provincial Councils and to the secretary of this association before the next annual meeting.”

The committee were fortunate in having present Dr. Pyne, Registrar of the College of Physicians and Surgeons of Ontario, as he was in a position to give official information regarding the attitude of that province on this question. He made it plain that the Medical Council of Ontario was pledged to grant reciprocity to any province having a Central Examining Board and whose curriculum was equal, in the main, to theirs. With reference to the course of five years of study now exacted, it was thought by all the members of the committee who represented Ontario, that four sessions of nine months each might be taken as equivalent. In fact there was a general impression that, while the conduct of the Ontario Medical Council in this connection might at times have been arbitrary, it was not, on the whole, inconsistent.

We shall take occasion to refer again to this matter in an editorial way, and trust in the meantime that the various Provincial Councils will give the above resolution their earnest consideration, so that, at the meeting of the association, to be held next year in Montreal, some definite scheme for reciprocity and inter-provincial or Dominion registration will be consummated.—*Mont. Med. Jour.*, Oct., '95.

DOMINION REGISTRATION.

We are pleased to note that the discussions which are being

carried on, especially in medical journals, in various parts of Canada, on the subject of Dominion or inter-provincial registration, are thoroughly earnest, and yet moderate in tone. There seems to be no doubt that all the provinces want something of the kind; and, if so, surely there are no insuperable obstacles in the way. It happens that the Ontario Medical Council has, by its rules and regulations, caused a certain amount of irritation among certain sections of the profession in other provinces. Without any reference to the merits of the case, we have to state that the council of this province has often been misunderstood by outsiders. We had very good evidence of this at the meetings of the committee appointed by the Canadian Medical Association, and held during the last meeting of that association, when Dr. Pyne, registrar of the council, gave a good deal of information with reference to the attitude of our medical parliament on this question. He showed clearly that our council had, years ago, passed a statute, which still exists, pledging that body to grant reciprocity to any province having a central examining board, with a curriculum equal to that which prevails in Ontario.

This, apparently, caused surprise in some members of the committee, but led to a very important discussion as to the proper length of a medical course. Ontario now requires five years. The majority of the members of the committee appeared to think that a course including four sessions of eight or nine months each would be preferred by most of the provinces. We think that would be a fair compromise, which would not be opposed by the majority of the profession in Ontario. The question as to the standard of matriculation may cause differences of opinion; but there is no reason, so far as we have information, why a solution should not be reached. A *friendly* conference could, probably, accomplish all that is desired in a comparatively short time. Let us have such a meeting between representatives of the different provinces as soon as possible.—
CANADIAN PRACTITIONER, November, 1895.

INTER-PROVINCIAL REGISTRATION.

It's hardly necessary in these days to show by argument that inter-provincial registration is a desirable measure, for although the number of physicians who emigrate from our province to another is small, and perhaps will always be small, yet we all wish to feel that if for reasons of health, finance, or of any other nature, we should at any time contemplate a change of residence from one part of the Dominion to another, that no obstruction will stand in the way of our registering when we make the change. The diseases met with

in one province are the diseases met with in all, and there are no peculiarities of treatment special to any of them. A physician qualified to practise in our province is qualified to practise in all, and it would seem as if he ought to be able to do so, and not find, as he does at present, a closed and impassable door at the threshold of every province outside of his own. Another important reason in its favor is that until it is accomplished, reciprocity with the mother country cannot take place; while upon its satisfactory accomplishment a registered physician will be able to practise anywhere in Canada or the United Kingdom. Meanwhile the experience of these maritime provinces, in which reciprocal registration has been definitely arranged, shows favorable results without any disadvantages that we have heard of. The subject has for several years past occupied the attention of the Canada Medical Association, but year after year, the report of the various committees appointed to investigate the matter and present a suitable scheme, was a monotonous and helpless *non possumus*. At the meeting before the last, this report was not received kindly, and it was stated plainly by various members, that if there was to be any earnestness shown in the matter, it was time it was apparent, that it had been played with too long, and that a definite result should be obtained, whether favorable or unfavorable. The consequence was the appointment of a strong committee, who met last year at Kingston. This committee, if they did nothing more, were successful in locating and bringing to light what all along has been the great stumbling-block, viz., the opposition of the Province of Ontario to any scheme which would differ in any material manner from the course of study and length of time of study authorized in that province. The members outside of Ontario were told, and in rather a patronizing manner, too, that inter-provincial registration was a very good thing indeed, but in order to obtain it they must insist on a five years' course of study, as Ontario does, and make the curriculum in all points equal to hers, if this desirable object was to be gained. But the Ontario representatives were promptly told that while it was true that province demanded a five years' course, yet, as the course was only six months, their total number of months consumed in study was only thirty; while the McGill students, for instance, whose course only extended over four years, yet each course being of nine months, occupied in study thirty-six months, and thus had a longer curriculum than the Ontario men. So far, then, from the McGill men being asked to raise their standard to that of Ontario, the boot was on the other foot, and they were in a position to ask Ontario to raise its standard to theirs. Thus for the first

time the complaisance of the Ontario representatives received a rude and unexpected shock, and when they were told that if they obstinately adhered to their Chinese wall, that that wall would be the means not only of keeping men out of their province, but that in the future it would be the means of confining their men within their province, in other words, that if Ontario shut ten Ontario men out, then, these gentlemen began to see that their position was not so impregnable as they imagined, and that it would be wiser to take a wider and deeper view of the matter than they had hitherto taken. It will be seen that now at last the various parties are in a position to treat, and this is an advance that has not hitherto been made.

The committee appointed at the St. John meeting consisted of the following : Sir James Grant, Drs. Cameron and Pyne, from Ontario ; Sir William Hingston, Drs. Marcil, Beausoliel, Chalatte, Parke, and Roddick, from Quebec ; Drs. Daniel, Christie, and White, from New Brunswick ; Drs. Farrell and Muir, from Nova Scotia ; and Dr. Warburton, from P. E. Island. The result of the work of this committee is embodied in the following resolution, which was passed unanimously, and after the matter had been thoroughly discussed :

"The committee appointed at the last meeting to look into the question of inter-provincial registration would beg to express their report, that by the system which at present obtains a graduate in medicine entitled to practise in one province, is not free to exercise his functions in all the provinces of this large, but sparsely-settled, Dominion ;

"That this condition of things prevents the names of medical practitioners in the Dominion being placed on the British register, becoming thereby British practitioners, which the Council of Medical Education of Great Britain has more than once signified its willingness to grant ;

"That with this end in view it is, therefore, most desirable that there should be a uniform standard of matriculation, a uniform standard of medical education, and a uniform method of examination for the whole Dominion.

"That to effect this purpose, the secretary be instructed to communicate with the various Provincial Councils before their next meeting, asking that each council discuss the question, and if possible, appoint one or more delegates to a Dominion Committee for the purpose of adjusting a suitable curriculum and carrying out the suggestions herein contained, and that such committee be requested to forward their finding to each of the Provincial Councils and to the secretary of this association before the next annual meeting."

It is to be hoped that each Provincial Council will thoroughly discuss this question, so that the delegates they appoint will receive full instructions, and be in a position to cast their votes intelligently; in this way there is every probability of a definite scheme being obtained.

We are in a position to state that the Council of Physicians and Surgeons of New Brunswick discussed this matter at a meeting held last month, and appointed three delegates to this committee.—*The Maritime Medical News*, April, 1896.

INTER-PROVINCIAL REGISTRATION CONTINUED.

In our last reference to the subject of inter-provincial registration, the difficulties met with by the various committees of the Canada Medical Association were referred to, more especially those offered by Ontario. One of the results of the meeting last held, and one of the most important, was the statement by Dr. Pyne, Registrar of Ontario, and the other members of the committee from Ontario, that they were willing to accept the four years of nine months each as equivalent to their course of five years. This would seem to bring matters within an appreciable distance of adjustment.

The time of study required by the various Provinces, so far as we have been able to obtain the information, is as follows: viz. British Columbia three years, Ontario five years, the other Provinces four years. In all these Provinces in addition, except in Nova Scotia, there is required an examination by the Medical Council. If, therefore, the term of four years of nine months each should be adopted as a minimum, the greatest change would be required in British Columbia, and we think the other Provinces now have legislative authority to change from a six months' to a nine months' course if they wish. Nova Scotia would require to obtain power to examine all candidates for registration.

The next difficulty would be the obtaining of an uniform standard of matriculation, and an uniform method of examination for the whole Dominion. With regard to the first, little difficulty should be experienced, the standard of the Council of Medical Education of Great Britain might be adopted, and indeed this standard is now practically adhered to.

An uniform method of examination would be somewhat more difficult to obtain, but is not at all unattainable. The simplest method would of course be, to have one central examining board and compel every candidate to appear before it. In this country of magnificent distances, however, this would entail too much hardship

and expense on students, and some modified scheme must be adopted. It might be possible to have one central examining board on which each province should be represented, who should prepare the examination papers and send them to the various councils, who should hold the examinations, and return the answered papers to the central board for final disposition and judgment. Or, again, there might be a central board who should have the right and duty of examining all the answered papers of the candidates and advising the various councils if their standard of examination was not efficiently maintained; the latter notification taking with it the penalty of refusal of inter-provincial registration. Or, again, the central board might consist of a certain number of inspectors, one or more of whom should be present at all examinations held in the various provinces, either with power to supplement any examination they might consider weak, or simply to report to the various councils their opinion on the examinations, leaving it with the other to take punitive action. There are plenty of methods by which an uniform standard of examination may be obtained, but the best can only be decided on after debate by a competent committee.

It is an encouraging and noteworthy fact, that our neighbours to the south are becoming every year more alive to the necessity of dealing with the subject of medical education and practice in such a way as to make it more and more difficult for uneducated and ignorant men to obtain an entrance into the profession. In that country, although a few years ago there was practically no legal restriction on the practice of medicine, now, more than half of the States and Territories have laws on the subject, dealing with it, of course, in various degrees of completeness. But the tendency among them all is to place the licensing power in the hands of State Boards, and thus reduce the power, frequently for evil, of the shadowy pretensions of a mere diploma, and require the possession of knowledge as well as a sheepskin. It is also very gratifying to know that the matter of extending the medical curriculum in that country to a four years' graded course is steadily gaining ground, and that the number of medical colleges which make this term necessary for graduation is constantly increasing.

There is also in the United States, an Association of State Medical and Licensing Boards, who meet once a year in "National Conference."

The following propositions which were carried at their meeting last year, show that their object is very similar to what we are now discussing in Canada :

1. "That as the system of state medical licensers has been adopted in a number of states, and there being a decided probability that the system of state control, in some form, will eventually be adopted by all the states, it is *necessary* that the several State Examining Boards should *at once* take measures for approximating, as nearly as possible, *substantial uniformity* as to rating and standards of requirements.

2. "That there should be at once established a system of *reciprocal inter-state action* on the part of state examining boards, under which licentiates may be able to acquire a legal status, on removing from one state to another, without re-examination.

3. "That measures be at once instituted for largely increasing the powers and influence of the National Conference, by which it may be placed more nearly in touch with the members and representatives of state examining boards, in order that its advisory and semi-judicial decisions and orders may gain increased force and corresponding effectiveness."

Like ourselves, this "National Conference" is endeavoring to obtain inter-state registration, and is working along the same lines. It is more than likely that the conference of delegates at the next meeting of the Canada Medical Association will be able to evolve a scheme so generally satisfactory, that it will meet with the approval of all the provinces.—*Maritime Medical News*, June, 1896.

HIGHER MEDICAL EDUCATION AND ONE QUALIFICATION FOR CANADA.*

To elevate the standard of medical education is a duty devolving upon us, and if every province in Canada will do the same, then a physician legalized in one province is legalized all over Canada. We have reciprocity in the Maritime Provinces, which is a step in advance.

In Canada we ought to aim at one qualification. How is it to be accomplished? Ans: by provincial and federal or remedial legislation. Every Medical Council should raise by common consent their curriculum of studies to four yearly sessions of nine months, and insist on a state examination for Canada. The Provincial Legislatures should give their consent by a short statute defining the provincial qualifications for medical practice, and delegating authority to the federal parliament to petition the Queen for an amendment to the British North America Act, so that the federal government could give us a law for Canada. One board of ex-

*Read before Maritime Medical Association, July, 1896, by R. McNeil, Stanley, P. E. I.

aminers to prepare the papers—the oral and written examination to be held in every province before the councils as now constituted, but the results and valuation of papers made by the central examining board. Such a qualification would be an admission to practise all over Canada—and would secure reciprocity with Great Britain and the United States, aye with the whole world. The profession will be what you make it, and will require of those who practise it that they take a broader view of the matter than we have hitherto done. Provincial legislation will secure for us powers to legislate on the question at Ottawa, and the profession in each province should make a united presentation of their case to the local governments and armed with their authority to unite the profession the federal government would be able to secure from the British parliament the required legislation. Gentlemen, this question is worthy your serious consideration, and no sectionalism or local jealousies should interfere. Every man who engages in medical practice, owes a duty to himself, to his brethren and his posterity—that it has been his aim to improve the science and leave behind him a name worthy of emulation. No profession can be respected that does not respect itself, and no profession can maintain a high standard without a corresponding higher preliminary and higher medical training.—*Abstracted from the Maritime Medical News, September, 1896.*

ON INTER-PROVINCIAL REGISTRATION.

In the *Montreal Gazette* of December 11th was printed a leading article, written, we are informed upon good authority, by a layman, and headed "A Great Opportunity." This article so fully expresses our own opinions upon the matter, and withal is written in so vigorous a style, that we venture to reproduce it.

"The annual meeting of the British Medical Association in Montreal is for many reasons an important occasion. The mere sending out of the programmes will draw attention all the world over to the attractions of Canada for tourist travel, and the advent of so many visitors is certain to make widely known the material resources and the industrial and social advancement of the Dominion. These are facts which it is to Canada's advantage to have known in the old country, and there is no class better fitted to spread that knowledge than the medical profession, who are constantly brought into friendly relations with all classes of the population. But there is another advantage likely to accrue from the meeting, of no less moment. It will give an impetus to medical education and research

all over the Dominion, and will bring the doctors here into touch with the profession in the old country. It will also show the most influential members of the profession in the United Kingdom what a high standard of medical education has been reached here, and that our institutions will not suffer by comparison with those on the other side of the Atlantic. But to take full advantage of this opportunity, it is necessary that an important step should be taken in the interim. The Canadian Medical Association will meet at Montreal on August 28th and 30th, immediately before the British Medical Association meetings, and the scheme of inter-provincial registration, which was referred to the provincial council at the last annual meeting, will come up for discussion, and, it is to be hoped, for final adoption. The medical profession in Canada have had this subject under discussion for many years, and it is quite time that it should be finally dealt with. The present condition of affairs is anomalous and vexatious. A doctor on one side of the Ottawa River cannot attend cases on the other, and Montreal specialists are prevented from being called in to consult on cases in Ontario. Even in the matter of legal evidence, opposing counsel may prevent a doctor from being heard because he has not the provincial qualification. All this is very absurd, and a serious injury to the public, which has a right to the best medical attendance procurable in the Dominion, wherever patient or doctor may happen to reside. The present arrangement is also a great disadvantage to medical students, who do not always know where they will find their best opportunity to practise, and are therefore compelled, as a matter of precaution, to take two or three provincial qualifications, thereby needlessly increasing the fees and the examinations. Another unfortunate result is that no Canadian qualification is recognized by the Medical Council of Great Britain as giving a right to practise in the old country, and Canadian diplomas are not regarded with the esteem they deserve. The McGill and Bishop's courses are accepted as a sufficient guarantee for the preliminary work, but the Canadian graduate has still to do some months' studying in England and take the final examinations before he can obtain an English qualification. In Australia, where the various colonies have a common standard of examination, the graduates have obtained the right of registration in England on merely presenting their diplomas. Medical education in Canada is quite as far advanced; but the General Medical Council of Great Britain say, reasonably enough: 'We cannot be expected to enquire into the various qualifications that obtain in the different provinces of the Dominion; adopt a common inter-

provincial standard, and we will gladly admit you to registration. At the meeting of the British Medical Association in Montreal next August there will be an unparalleled opportunity for advancing in this direction, if the scheme of inter-provincial registration now before the provincial boards is adopted in the meantime. The British Medical Association takes cognizance of all matters of interest to the profession, and after seeing our system of medical education, the equipment of our institutions, and the men who administer them, it might very properly pass a resolution recommending the Medical Council in England to admit Canadian practitioners to registration in the old country on presentation of their diplomas. Such a recommendation could hardly fail of its effect, for the leading members of the Medical Council are also leading members of the Association, which is thoroughly representative of the profession in the United Kingdom. But, in order to gain this valuable privilege, it is absolutely necessary that there should be a common standard of examination throughout the Dominion. So long as the various provinces refuse to accept each other's qualifications, one can hardly expect the British Medical Council to accept any of them."

There are in this article one or two points that require possibly some little explanation. We believe, for example, that the reason why the authorities in England permit Australian practitioners to register, is not that there is a common standard of medical education throughout the Australian colonies, but because those colonies have up to the present time remained separate and are not confederate. If, as is not outside the range of possibility, the Australian colonies unite, then according to the present British law they will lose their privilege unless they establish some scheme of inter-provincial registration. But, as the matter stands at present, undoubtedly the Australian graduate can register in Great Britain, and can in consequence practise over a large portion of the empire, and the Canadian cannot, until some common scheme of licensing is agreed upon by the provinces of the Dominion.

We are glad to learn from the pages of our esteemed contemporary, *L'Union Médicale*, that in the Province of Quebec the report of the inter-provincial reciprocity of the Canadian Medical Association has already been brought before the Provincial Board of Medicine of Quebec, and that a committee composed of Drs. D. Marcil, A. T. Brosseau, J. M. Beausoleil, E. E. Laurent, and C. S. Parke have reported to the Board in favor of adopting the scheme put forward. This committee asks that the officers of the Council

be authorized to sign a preliminary treaty with the other provincial Boards of the Dominion, and with that of Prince Edward Island, so as to be able to give a special license conferring the right to practise throughout British North America.

As the *British Medical Journal* remarks in another able leading article, it is fitting that the sixtieth anniversary of the Queen's accession be celebrated in the profession by an act which indicates the imperial unity of our profession, namely, this Montreal meeting of the British Medical Association. The members of the profession in Canada can, it seems to us, celebrate the great occasion in no more memorable way than in drawing together and, by accepting interprovincial registration, gaining great and imperial opportunities.—*Montreal Medical Journal*, December, 1896.

REPORT OF THE COMMITTEE ON INTER-PROVINCIAL REGISTRATION.*

"Your Committee beg leave to report that, having examined the present requirements of the Licensing Boards of the several provinces, with a view to obtaining by mutual concession a uniform standard of matriculation, education and examination, would recommend the following:

"I. Matriculation—The schedule of subjects shall comprise (1) English language, including grammar, composition and writing from dictation; (2) Arithmetic, including vulgar and decimal fractions, and the extraction of the square root; (3) Algebra, to the end of the simple equations; (4) Geometry, Euclid, books 1, 2 and 3, with easy deductions; (5) Latin grammar, translation from specified authors, or of easy passages not taken from such authors; (6) Elementary mechanics of solids and fluids, comprising the elements of statics, dynamics, hydrostatics, and elementary chemistry; (7) History of England and Canada, with questions in modern geography; (8) and any one of the three following subjects: French, Greek and German, the requirements being the same as in Latin.

Fifty per cent. of the marks in every subject shall be necessary for a pass, and 75 per cent. for honors.

"In lieu of the above will be accepted a degree in arts of any university in Her Majesty's dominions, or from any college or university that may hereafter be recognized, but no matriculation in arts in any university will be accepted.

"II. Professional Education—(a) The curriculum of professional studies shall begin after the passing of the matriculation examination, and shall comprise a graded course in the regulation

* Presented at Montreal meeting, 1896, by Dr. Roddick.

branches of four yearly sessions of not less than eight months of actual attendance on lectures in each year. (*b*) The subjects to be anatomy, physiology, chemistry, materia medica, therapeutics, practical anatomy, histology, practical chemistry, pharmacy, surgery and clinical surgery, medicine and clinical medicine, including diseases of eye, ear, throat and nose, mental diseases, diseases of women and children, medical jurisprudence, toxicology, hygiene, pathology, including bacteriology. (*c*) That at least twenty-four months out of the graded four years, eight months each, be required for attendance on hospital practice, to begin with the second year of study. (*d*) That proof of attendance on not less than six cases of obstetrics be required.

"III. Examinations—(*a*) All candidates for registration in the various provinces, in addition to having fulfilled the foregoing requirements, shall be required to undergo examination before examiners to be appointed in each of the provinces by their respective councils, or by means of assessors, as in the Province of Quebec, or by delegating their authority to one central body, as has been done in Manitoba. Such examination shall comprise all the subjects of professional study, shall be both written and oral, and 50 per cent. of the marks shall be required in every subject for a pass. (*b*) The Committee make these resolutions merely as suggestions for the consideration of the councils of the several provinces as a mutual basis of agreement, and desire that each be requested to report thereon to the next annual meeting of the association, and also send one or more delegates to represent them at that meeting.

"In order that the councils may be enabled to consider the question with a full knowledge of the facts, it is also desired that each registrar should send to every member of every council in Canada a copy of the statutes and of the regulations in connection with the council that he represents."

In the year 1897 several references were made to the subject at various medical meetings and in the daily press of Canada.

Dr. Moore, at the meeting of the Canadian Association, spoke as follows in his presidential address :

MEDICAL LEGISLATION.

The third object, I regret to say, has not yet been reached, but I feel confident that through the efforts and influence of the members of this association it soon will be an accomplished fact. By the provisions of the British North America Act all matters of an educational nature were given over to the legislatures of the pro-

vinces, they to make such laws, rules, and regulations as to them seemed proper. Whether this was wise or not I am not prepared to say, but it appears to me that the question of education is of a national rather than a provincial character, more especially medical science, as it knows no geographical confines. Soon after the formation of the legislatures the medical profession in each province, believing it to be in their interest as well as in the interest of the public, sought and obtained from their respective legislatures an act entitled "The Medical Act," which provided for the formation and election of a Medical Council. By virtue of the provisions of this act the licensing power and the complete control of medical education were given to and vested in this body. This council was to be a representative body, and to be re-elected once in a given number of years. Unfortunately no concerted action took place between the members of the profession in the different provinces before appealing to the legislatures, and the results were just what might naturally be expected, striking differences in the acts asked for and obtained. These diversities still exist, and it is these dissimilarities that offer to-day the greatest barrier to inter-provincial registration. To my mind there is nothing of more importance to the medical profession in Canada than uniformity in medical legislation. Now that we are nearly all of one mind, only divided upon issues which are of no vital importance, let us make an earnest appeal to the law-makers and have the clauses not in harmony repealed. I trust that at this meeting a representative committee may be appointed to draft a medical act suitable for the whole Dominion. When this is accomplished a copy can be placed in the hands of each Provincial Medical Council, with the request that they appeal to their respective legislatures to amend their existing medical acts so as to harmonize them with the proposed one and have them become law. Inter-provincial registration will then be an easy matter and would be readily accomplished. Then we could turn our eyes eastward to the Mother Country and seek reciprocity with her, and as she has always listened attentively to any reasonable request made by us we might confidently look for the day soon to arrive when our prayer would be allowed, and any man obtaining a license in any of our provinces would be free to practise medicine in any clime where floats the Union Jack.

Dr. Roddick, in his presidential address before the British Medical Association, spoke as follows :

MEDICAL LEGISLATION IN CANADA.

Time will not permit of my discussing the subject of medical

legislation in Canada at any length; and besides you will find it very fully treated in the excellent official guide or souvenir, prepared for you by the executive committee. In addition I might explain, however, that when the British American provinces became confederated in 1867, under the British North America Act, the governance of educational matters was taken away from the federal authorities and handed over to the provinces, each to look after them in its own way. In consequence we have since had a curious complexity of medical legislation, there being practically no uniformity amongst the provinces in regard to standard of study or qualification for practice. Each province has its own medical board or Medical Council, as the case may be, which has the power to grant license to practise either after examination or on simply presenting the diploma of certain recognized universities. In the Provinces of Ontario and British Columbia an examination is exacted; in the others the license is given under certain restrictions on presentation of the degree, although in the Maritime Provinces an examining board is now about to be established. In this way, as can readily be seen, a Chinese wall is built round each province, and the frontier is carefully guarded so that it is unsafe for a medical man to pass from one to the other unarmed with a license, because of the risk of fine or even imprisonment. Such a condition of affairs is hardly credible and probably exists nowhere else to the same extent. What is the remedy? Two remedies have been suggested—either the establishment of a central examining board in each province with a uniform standard of matriculation and a uniformly high standard of curriculum, which shall in time lead up to a general scheme of reciprocity; or, secondly, a Dominion Examining Board. The first scheme is at present under serious consideration; although there are many difficulties in the way of its accomplishment, no one of them is insuperable, however, providing a spirit of conciliation prevails. The second alternative (a Dominion Examining Board) would in many respects be more desirable, because not only could the licentiate practise in any part of the Dominion, but he could register in Great Britain, and thus receive recognition all over the Empire. As you are doubtless aware, we, as a profession, suffer in this country from being inhabitants of provinces which are confederated. Under the Medical Act, now of some twelve years' standing, it has been decided, in effect, that the Medical Council of the United Kingdom can recognize the degrees of universities situated in autonomous provinces only. As a consequence, Australians obtain privileges which are denied to us, being permitted to register in

Great Britain without examination. We are being punished for belonging to a colony whose form of government is recognized to be in advance of theirs, and likely to be imitated by them. Let us give our Australian brethren a hint: If the confederation of your provinces be in contemplation, see to it that all matters of professional education are left in the hands of the central government, at least as far as qualification for registration is concerned. By so doing you will avoid the almost inextricable tangle in which we in Canada find ourselves. Let common school education go to the various provinces if you will, but for the profession of medicine (and doubtless law also) there should be a uniform standard of matriculation, a uniform curriculum of medical studies, and one Central Examining and Registering Board composed of the best men from all the universities. We hope in Canada to reach that ideal at no distant date; in fact I have the very best authority for stating that it is not impossible of accomplishment. Some scheme of reciprocity first arranged would doubtless make the task less difficult, but failing that, our duty is to arrange for some legislation which shall give our better and more ambitious students an opportunity of passing a Dominion Licensing Board (or whatever it may be called), which shall give the privilege of practising their profession not only in any part of their native country, but in any part of the world over which the British flag flies. Such a scheme need not interfere in any way with the autonomy of the provinces. Each may still retain its Provincial Board for the purpose of examining and issuing licenses to those candidates who are satisfied to practise their profession in the limited sphere of their own provinces. I think the legislators of this country will some day (and not far distant either) be induced to see that the system which at present obtains is unworthy of a great and growing country.

LONDON "LANCET" ON THE SUBJECT.

The important question of securing for the Dominion an uniform standard of medical education has been a prominent topic of the week. It was debated at the annual meeting of the Canadian Medical Association on Monday and Tuesday, when also a scheme for inter-provincial registration was discussed and adopted by the Provinces of New Brunswick, Quebec, Manitoba, and Prince Edward Island. It was also referred to by the president of the British Medical Association in his opening address, and in commenting upon this Lord Lister, in moving the vote of thanks to the president, made some judicious remarks. Lord Lister thought that the great

objection to a central examining board was that the examinations would be conducted by those who were ignorant of the curricula of the various schools, and for himself preferred the system obtaining in England of a central controlling body (the General Medical Council) with power to inspect and visit the various licensing bodies. Any opinion of Lord Lister's must have great weight—although it cannot be forgotten that some twenty years ago the idea of a conjoint Examining Board for England was on the eve of accomplishment, some of the bodies concerned voluntarily consenting to abrogate their right to grant licenses. Theoretically a single and uniform standard for the whole country would seem to be the ideal to be aimed at—all additional qualifications and degrees being regarded as academic distinctions; but it may be, as Lord Lister evidently fears, that the practical working of such a scheme could not be effected without injustice to candidates trained on various methods.

—*Special Canadian Supplement to The Lancet.*

A DOMINION MEDICAL COUNCIL.

We are pleased to see that the medical fraternity is fully alive to the importance of bringing about a uniformity amongst the provinces in regard to the standard of study and qualifications for practice. In his opening address before the British Medical Association, now in session in Montreal, the president, Dr. T. G. Roddick, of Montreal, devoted considerable time to this question. At present, as Dr. Roddick said, "a Chinese wall is built around each province, and the frontier is carefully guarded, so that it is unsafe for a medical man to pass from one to the other unarmed with a license, because of the risk of fine, or even imprisonment. Such a condition of affairs is hardly credible, and probably exists no place else to the same extent." Each province has its own medical board or council, which grants the right to practise in that province on its own terms. Ontario and British Columbia require an examination in every case, no matter what diploma the applicant may possess; in the other provinces a diploma is accepted with certain restrictions. Dr. Coventry, of Windsor, in his presidential address before the Ontario Medical Association in June last, in this city, referred to the same unfortunate condition of affairs, and quite as strongly as Dr. Roddick urged a remedy.

The cause of the lack of uniformity is to be found in the fact that the British North America Act gave to the provinces the government of educational matters. There were special reasons why the provinces should control the common schools, but, as Dr. Roddick

points out, there are absolutely no reasons why professional education should be provincial. All the reasons are on the other side. A man who is fully qualified to practise in one place is equally qualified to practise in any other. Why should legislation prevent a Toronto doctor practising in Montreal or Winnipeg? If the provinces were hostile nations some justification for this exclusiveness might be urged; but when they together form one nation, which it is the aspiration of all patriots to consolidate and make really one, all barriers should be done away with. Dr. Coventry dwelt upon this aspect. He said: "I am intensely impressed with the idea that if we are to be entrusted with the development and destinies of this new country, we must not add a medical barrier to the religious, racial, and other obstructions having a tendency to prevent and postpone the unity of this country." Another decided disadvantage is found in the regulations of the British Medical Council. This body decided, some twelve years ago, to recognize only the degrees of universities situated in autonomous colonies. The result is that a doctor from any one of the Australian colonies can register in Great Britain without examination, while an Ontario doctor, for example, cannot. If a Dominion diploma were granted, a Canadian doctor would be recognized throughout the British Empire.

There are two remedies suggested—"either the establishment of a Central Examining Board in each province, with a uniform standard of matriculation and a uniformly high standard of curriculum, which shall in time lead up to a general scheme of reciprocity; or, secondly, a Dominion Examining Board." This latter is, of course, the more desirable. It is the only one that will fully meet the case. Special legislation would have to be passed, however, and while this is being prepared for efforts should be directed toward obtaining uniformity of the educational standards in the different provinces, since this in any case must be done. —*Toronto Mail and Empire*.

MEDICAL FEDERATION.

It is gratifying that the visit of the British Medical Association to Montreal has not overshadowed the very important meeting of the Canadian Medical Association brought to a conclusion yesterday. On the contrary, the British Medical Association meeting has only served to bring into greater prominence the most important subject with which the Canadian Association had to deal—that of inter-provincial registration—for Dr. Roddick made this one of the main subjects of his presidential address, and Lord Lister, in the

course of a short speech, made a notable reference to it. It will be seen, on reference to the report appearing in another column, that terms of agreement have been arrived at between all the provinces except Ontario. It is a matter for universal regret that Ontario is left out, but in the case of that province there are legal difficulties which cannot easily be overcome. The Ontario Act lays down three conditions for reciprocity with another province as to medical qualifications :

(a) The province must have a central examining board, which has the sole right of granting certificates of qualification.

(b) The course of study and standard of qualification must be equal to those required in Ontario.

(c) The province must grant similar privileges to Ontario.

The third condition is, of course, fulfilled by an understanding such as the other provinces have arrived at. As to the first, it is a question of system on which there is ample room for difference of opinion. A central examining board is not by any means an unmixed blessing. It is, no doubt, a powerful engine for enforcing a higher standard of efficiency, but, on the other hand, it tends to a uniformity in medical education which is not altogether desirable. Reciprocity in qualifications is certainly to be desired, and uniformity of standard is almost a necessary condition ; but in order to secure this it is not necessary to sacrifice diversity of method—in itself a great advantage. When all medical students undergo the same examination there is a tendency for medical education to conform itself very closely to that examination. As Lord Lister pointed out, greater freedom is desirable, and it was, no doubt, with this idea in his mind that he recommended the English system. The Province of Quebec, it may be remarked, follows on the same lines. The universities pursue those methods of medical education which seem best fitted to the class of students they have to deal with. The Medical Board of the province does not itself hold the examinations, but by means of assessors, independent of the universities concerned, it takes cognizance of the university examinations, and thus secures the maintenance of a sufficiently high standard. There is nothing to show that this is not just as good a system as that in force in Ontario. It is better suited to this province, and it would be absurd to expect Quebec to set up a central examining board because that plan happens to suit Ontario.

As to the question of standard of qualification and courses of study, Quebec asks for no concessions. But having in view the limited resources of the smaller provinces, it is reasonable that for

the advantage of the profession as a whole, the larger and wealthier provinces should not be too exacting. A boon like federation can only be obtained by mutual concession and compromise, and those who are richest and strongest can afford to give the most. These were the principles on which the Dominion was founded, and if the doctors want to build with the same success they must follow on the same lines. It is to be hoped the Ontario doctors will be brought to see this question in the same light as the founders of Confederation from that province. The legal difficulty is perhaps not so great if it is tackled resolutely. The doctors are an influential body, and ought not to be afraid of the small band of Patrons in the legislature, for we believe that is the real bugbear. It is sincerely to be hoped that the Ontario Medical Council will take heart of grace and fall into line. Any concession it may make for the moment will be compensated for by future gains. At present a doctor with an Ontario qualification cannot attend a patient on the other side of the Ottawa in the Province of Quebec. This is not as it should be. For the sake of the public, as well as for the credit of the profession, it ought to be altered.—*The Gazette, Montreal, September 1, 1897.*

CANADIAN MEDICAL ASSOCIATION.

At the Montreal meeting the committee brought in the following report :

"The committee beg leave to report that the Medical Councils of Quebec, Prince Edward Island, Nova Scotia, New Brunswick, and Manitoba have signified by resolution their approval of the resolutions of the committee of 1896, and have accepted them as the basis of agreement for inter-provincial registration. We therefore recommend that the matter be referred to the councils mentioned to formulate an agreement, and to carry it into effect. Signed by Dr. D. Marsil, Dr. C. S. Parke, Dr. H. Cholette, Dr. Beausoliel, of Quebec ; Dr. George Coulthard, jr., Thos. Walker, of New Brunswick ; Dr. Ed. Farrell, Dr. W. S. Smith, of Nova Scotia ; Dr. Joseph MacLeod, Dr. James Warburton, of Prince Edward Island ; Dr. R. S. Thornton, of Manitoba ; Dr. James Christie, of British Columbia."

Dr. Walker moved the adoption of this report. Ontario did not appear as one of the assenting councils, and this was explained by doctors from that Province as due to the fact that they could not reciprocate while the Provincial law remains as it is. They would not

consent to reduce the term of study from five years to meet the other Provinces. Ontario doctors disclaimed any wish to be stumblingblocks, but could see no use in adopting a scheme of inter-provincial registration.

Dr. Beausoleil championed the cause of Quebec and the other Provinces and was supported by several gentlemen. They asked their Ontario colleagues to give and take, and pointed out that in Quebec the profession was endeavoring to harmonize the curriculum and standard with that of Ontario. Moreover, it was argued that a four-year course of eight months each was at least equal to a five-year course of six-months each.

Dr. Pyne, Toronto, came out for Imperial federation of the medical profession, and declared that it would be impossible to obtain this or even reciprocity with the motherland if the standard of Ontario was lowered. It was an easier method for the other Provinces to come up than for Ontario to go down.

Dr. Thorburn, Toronto, spoke in a similar strain, while expressing sympathy with the other Provinces.

The report was adopted, many Ontario delegates voting aye.

This is a very imperfect report of the discussion which followed the presentation of the report. Among others who spoke were Drs. Dickson, Bray, Thornton, and H. P. Wright.

Many letters have been written to the lay and medical press. We have not space for many of these, but we think the following letter from Dr. Niven is well worthy of reproduction :

MEDICAL FEDERATION.

To the Editor of the *Mail and Empire* :

SIR,—At a meeting of the Medical Association of Canada, held in Montreal, the provinces, Quebec, Nova Scotia, New Brunswick, Prince Edward Island, Manitoba, British Columbia, approved of a resolution that such a federation was necessary, and referred the whole to the various Medical Councils to form an agreement on this basis. Ontario alone refused to have anything to do with this step, which in this enlightened age seems to be the only proper thing to do. The argument urged by the Ontario member, Dr. Bray, was that the graduates of other universities could not pass the Ontario matriculation examination. I should like to give the reasons why well-educated (which undoubtedly they are) matriculants and degree holders of other universities cannot pass the Ontario Board. It can be answered in about a dozen words. They have not studied the Ross library. Ontario may boast of its

very liberal education, yet I do not know of any other country in the world where education is so narrow, and where the class books, which must be read and studied in order to pass their departmental examination, contain as much bad English. I do not give this on my own authority, but on that of one of the best informed educationists in the province. As for the Ontario rules of classical pronunciation, it would make Porson turn in his grave if he heard a high school teacher reading Virgil or Homer to his class.

The Ontario Medical Council's professional examinations are up to the standard of any school, yet why should they, in the liberal examination for matriculation, want more than such a university as McGill? The only reason that I can see is that in order to pass for Ontario it is necessary to buy and study the books that are so badly gotten up by the Ontario Education Department. This is not liberal education; it is departmental education, which turns out more illiberal educated men than any other system in the world.

I don't think that the medical men as a whole in Ontario wish to set up an unsurpassable barrier against other provinces, but a few school men in this province wish to keep all the fees to their own schools; and as the schools govern the Medical Council to a very large extent, what they determine must rule the medical affairs of this province. It should not be so. We are supposed to be a liberal profession, but what I read in the Montreal papers of the past week I am a little afraid that the certain men who represented us there were far from liberal in their ideas. Would it not be much more creditable for us to further federation from the outside than to be forced into it, as undoubtedly we will be, for, as Dr. Bray says, the Legislature of Ontario is not very sweet on the council, and may take a hand in and compel federation on line that would not be so good as are laid down by the other provinces.

Yours, etc.,

J. S. NIVEN.

September 8, 1897.

MEDICAL SCHOOLS AND MEDICAL FEDERATION.

Some statements made in this letter are worthy of careful consideration. Dr. Niven is a physician of standing and culture who received his education in Trinity College, Dublin. He is in a position to give an opinion that is perfectly unprejudiced by any selfish considerations. His statement, that a few school men in Ontario form the chief barrier against the other provinces, is rather a serious one, and we do not know that it is correct. As a matter of fact it

is difficult to ascertain the views of the school men on the subject because they do not appear to have paid sufficient attention to it. We consider that their indifference and, in some cases, ignorance as to the various aspects of the whole vexed question are somewhat remarkable. If the school men oppose inter-provincial registration from any selfish motives they will deserve condemnation from the great mass of the profession.

Dr. Niven makes another important statement to the effect that, if our representatives from Ontario do not show more liberality in the future than they have in the past, the Legislature of Ontario is likely to interfere. We believe this is correct. There is a strong feeling respecting the matter in the minds of a large proportion of our citizens, as shown by the fact that the lay press is becoming interested, and public opinion will soon make itself felt in various quarters.

Progress of Medicine.

OBSTETRICS

IN CHARGE OF

ADAM H. WRIGHT, B.A., M.D. Tor.,

Professor of Obstetrics in the University of Toronto. Obstetrician to
the Toronto General Hospital;

AND

H. T. MACHELL, M.D.,

Surgeon St. John's Hospital and Victoria Hospital for Sick Children.

ASSISTED BY

H. CRAWFORD SCADDING, M.D.,

Physician to Victoria Hospital for Sick Children.

MEDICAL THERAPY OF THE FEMALE GENITAL TRACT.

O. B. Will (*Am. Gyn. and Obs. Jour.*) makes a strong plea for more intelligent medical methods and principles concerning the genital tract. He considers the disorders to which medical resources are applicable are usually the result of infection from pathogenic germs, and under any and all circumstances accompanied by vascular engorgement if not stasis, more or less general and severe, with hyperblastic activity of varying extent and greater or less pain, it becomes necessary to select agents for the accomplishment of the following objects which seem legitimately to govern in all local therapy, viz., depletion, anæsthesia, antisepsis, resorption and reconstruction.

He asks what do we mean by depletion and how can it be accomplished. Under states of engorgement of the pelvic viscera, especially the uterus and adjacent tissues in which the vessels are distended, it seems necessary to deplete in some way, but it seems equally advisable to question the legitimacy of abstracting the serum or fluid alone from them and thus furthering an accumulation and condensation of the more solid organic contents. The healthy nutritive activities demand a rapidly moving, yet fluid, as the abnormal requires a sluggish, circulation. Any act that lessens the fluid

and increases the solid constituents of the circulating medium, above the normal standard, jeopardizes the functional well-being of any organ or tissue. And yet this is exactly what is done every day all over the country by the conventional boroglyceride and glycerine tamponade of the vagina. Although a marked sense of comfort is speedily imparted by such treatment, the relief obtained is only temporary. The conditions becoming even more aggravated and obstinate excepting possibly in œdema of the mucous membrane and immediately underlying tissues of the vagina.

As compared with the foregoing popular method we have in the time-honored hot douche a much more rational and meritorious procedure and one perfectly in consonance with modern pathology and histology. By the action of the penetrating, moist heat upon the vaso-motor nervous system, as well as directly upon the tissues themselves, the blood is driven either backward or onward into receptacles of larger calibre. As in all classes of inflammation and congestion the value of moist heat is unquestioned, and in the therapy of the female genital tract it is second to none other.

He suggests the use of the fountain syringe and sterilized water, and lays considerable stress upon the patient's position and the time occupied. Like most of us he thinks the squatting position while irrigating the vagina practically worthless. Such a position is a most unfavorable one, in that gravity alone, without the inevitable aid of the patient's muscular efforts, is sufficient to force the pelvic and abdominal contents downward, choking up the outlet and mechanically obstructing the circulation—the thing that should be avoided.

The best positions are the exaggerated lateral and knee-elbow, the former being applicable with the aid of a Kelly pad, the latter in an ordinary bath-tub. In assuming either of these positions, if the patient be properly instructed as to the intent, the abdominal pressure is, of course, removed, the pelvic organs elevated, and the penetrability and efficiency of the heat in emptying the local circulatory system enhanced many fold. After such a vaginal irrigation given in a small stream, and as hot as can be borne for half an hour, the patient should be asked to maintain the recumbent posture for several hours. He deprecates the hot vaginal morning douche and then allowing the patient to be on her feet the remainder of the day. The relaxing effect of the application temporarily softens and weakens the tissues and supports and causes them to lose their resiliency for some hours, during which, if the erect position is indulged in, the pelvic organs settle down, and when the vessels fill again, as they

must, their position is more cramped than before and their tortuosity increased. On the contrary, if the recumbent posture is maintained until reaction takes place, the normal elasticity of the vascular and other tissues is restored and a greater resistance offered to all morbid impulses.

Salines, such as the chloride of sodium, may be judiciously associated with this form of depletion. They not only cleanse the mucous membrane of accumulated secretions, but so alter the glandular products as to favor and promote their rapid elimination, relieve the tension and stimulate the resolvent and nutritive forces. The bichloride of mercury may be used alternately with the saline.

The foregoing method is as applicable to the interior of the uterus as the vagina, excepting that its application must be in the hands of the physician himself or those of a competent nurse under his immediate supervision. In intra-uterine therapy glycerine has no place whatever. The pain it produces is always in excess of any possible benefit. The hot aseptic and antiseptic douches, however, are as acceptable and valuable here as in the vagina. In uterine irrigation the dorsal position is the only practicable one, preferably after a seance of five or ten minutes in the lateral or knee-elbow attitude, in order to relieve the tension of pressure. With the patient on her back and a valvular speculum in situ, the os naturally patulous or rendered artificially so, a double current cathether, or similarly constructed uterine douche point, should be introduced up to the fundus and a stream of water, saline or antiseptic, of a temperature at first slightly in excess of that of the body, increasing to 120° F., should be turned on from a fountain elevated slightly above the level of the patient. Twenty to thirty minutes should be devoted to such irrigation.

Although such irrigations are in themselves anæsthetic, conditions of hyperæsthesia are occasionally met with, which prohibit manipulations of any kind. Here a local anæsthetic is an absolute necessity, and nothing is considered equal to cocaine. A 10 per cent. solution painted at first on the mucous membrane at the introitus vagina will enable the physician to examine the vagina, and the patient to assume a relaxed condition. A little of the same solution may be thrown into the uterus itself and thus save the patient the pain of the irrigator and the first impact of the irrigating stream. This tends to prevent nervous irritation and pain, a desideratum in these patients.

The nearest approach to resolvents and absorptions is seen in the equally conventional and routine iodine and ichthyol. Iodine, as

ordinarily used, is probably of no use whatever, but in aqueous solutions, so that the absorbents or tissues themselves, by endosmotic action, can take it up and give it a chance to exert an alterative influence upon the deeper strata, it is probably of some use.

Ichthyol, of itself, is an agent of peculiar and intense penetrability and synergistic activity, but it is usually mixed with glycerine and applied on tampons to the vaginal vault. It is true that more or less benefit is obtained from it in that way, but rather in spite of than in consequence of the unholy alliance into which it is forced. Used preferably pure, or in strong, aqueous solution, in contact with a surface properly prepared for it by fair depletion and the removal of viscid secretions, it becomes in both vagina and uterus, one of the most powerful resolvent agents and satisfactory anodynes and antiseptics that we possess, and one that will accomplish more in the reduction of inflammatory and congestive, not to say neurotic, pelvic disorders than we at the present time probably apprehend.

Barring the presence of fungosities and irregular growths, he believes the method of cauterization is often the more satisfactory in the management of intra-uterine inflammatory and hypertrophic conditions from whatever cause. Of recent years the profession has been the unwilling witness of the value of these agents as applied under the stress of public demand. The country is to day flooded with, and the profession and women generally besieged by, the peddlers of scores of kinds of wafers, capsules, and tablets, consisting mostly of some powerful cauterant and astringent, masked by anodynes and astringents, for use in the genital canal in all cases of presumed "ulceration," inflammation, catarrh, etc. The repetition of their use, with the synergistic influence of hot baths and irrigations, has unquestionably served to accomplish much in a curative way, and serves to teach us, as we have been taught before, the real position which should be given to the class of agents to which these bastard preparations owe their virtue. It is in just the class of cases not amenable to the milder measures that this form of treatment gives its most brilliant results. If as much attention were given to obtaining an accurate knowledge of the nature and use of cauterants and escharotics as is, and has been given to the development of surgical procedures and technique, we would to-day be in possession of means and advantages that we do not now have and such as would revolutionize gynæcological practice. In the milder cases he had satisfaction with the use of the saturated solution of

permanganate of potash. In the more severe cases he uses the zinc sulphate, and where more severe caustic action is desired zinc chloride. These may be applied in aqueous solution to the interior of the uterus, taking care to protect the cervical canal by the introduction into it of a pledget of cotton covered with an ointment of soda bicarbonate in vaseline. No more evidence of functional disturbance has been observed after the judicious use of caustics than after surgical procedure.

The strictly professional and personal attention which this course of treatment demands seems to be our chief objection to it.

ORTHOPÆDIC SURGERY.

IN CHARGE OF

CLARENCE L. STARR, M.B. Tor., M.D. Bel. Hosp. Coll.,
Surgeon to Industrial Refuge.

TREATMENT OF DEFORMITY IN POTTS' DISEASE.

Although forcible reduction of deformity in tubercular caries of the spine has been advocated at various times, both in America and in Europe, and has been practised in a number of cases in France and Germany, yet it has always met with considerable opposition.

Dr. Calot, of Berck-sur-Mer, has recently published a report (*Semaine Médicale*, June 23, 1896) of thirty-seven cases in which he employed this method with very satisfactory results. None are reported as being harmed by the treatment, and in all it is claimed that the healing process is very much hastened, recovery taking place in most cases in ten months or less.

Probably the first cases treated by the Calot method in England were treated by Mr. Robert Jones and Mr. A. H. Tubby at the Royal Southern Hospital, Liverpool, on July 24th of this year (*London Lancet*), when they demonstrated on a series of cases the possibility of complete reduction of deformity.

The ages of the children operated upon ranged from three to eight years, and the deformities varied considerably, some of them being extreme.

Reduction was accomplished with considerable facility in all these cases.

The method of reduction is to make forcible traction at the upper and lower parts of the spinal column, at the same time making firm pressure over the prominence.

After the deformity is reduced, a snugly fitting plaster of Paris jacket is put on, and the case treated as an ordinary case of Potts' disease.

To the knowledge of the writer this method has never been employed in this country, and at the present time, owing to the

short time that has elapsed since operation, an exact estimate of the value of this method of procedure is impossible.

It is extremely interesting, however, as indicating the possibility of doing away with this, worst of all deformities, and adding another triumph to modern surgery.

This method is presumably only applicable to acute cases, or cases in which the disease is still in progress, and not to those cases where the disease has been arrested and recovery complete with more or less deformity.

TREATMENT OF FIBROUS ANKYLOSIS BY SUPERHEATED DRY AIR.

Mr. W. J. Walsham, of St. Bartholomew's Hospital London, presented a paper to the American Orthopædic Association (Trans. American Orthopædic Association, Vol. viii) on treatment of static flat-foot by means of an apparatus which enabled him to employ dry air, heated to a very high temperature, for a period varying from thirty minutes to one-and-one-half hours. The results were very satisfactory; a considerable degree of motion and suppleness being obtained after each application, in feet which were rigid beforehand.

Dr. V. P. Gibney, surgeon-in-chief of the Hospital for Ruptured and Crippled, New York, presented before the Practitioners' Society (*Medical Record*, January 23rd, 1897) a paper giving notes on several cases of stiff and painful joints, including rheumatic and tubercular cases, treated in the same manner.

Three of the cases were of firm fibrous ankylosis of the knee following tuberculous osteitis.

Case 1. On commencing hot-air treatment had four degrees of motion. Was given one bath daily of 40 to 50 minutes duration, at a temperature ranging from 255° to 280° F. Gained from 3 to 4 degrees of motion each treatment or total gain of 24 degrees after seven treatments.

Case 2. Had 15 degrees of motion, and after six treatments gained 12 degrees without any force being used. It was doubtful whether active disease was fully arrested in this case and so treatment was discontinued.

Case 3. No motion, and any efforts to move the joints elicited great pain. After two or three baths, no gain was made in the correction of the deformity and joint seemed just as sensitive if any attempt at motion was made.

The adhesions in this case were afterward broken up under an anæsthetic, and on coming out from its influence, the pain which

was intense, was quickly relieved after the knee was placed in cylinder at a temperature of 280° F. These may be taken as fair samples of the good effect which one may expect from superheated dry air in this class of cases.

One case of rheumatic arthritis which had existed six years, and resisted the treatment at several of the baths of the United States, showed considerable improvement after three or four treatments at a temperature ranging from 240° to 260° F.

By massage and traction supplemented by large doses of Potassium Iodide, some improvement was obtained before hot-air plan was tried; but all motions of knees, elbows and hands were limited and painful.

After baths, as above stated, she expressed herself as very comfortable, and massage and passive motion were subsequently employed without producing any reaction, and very little pain. Breaking up some small adhesions caused some pain, but it quickly passed off, leaving all joints much more flexible.

Two cases of traumatic arthritis of knee are recorded as considerably improved—each one gaining a range of motion, freedom from pain, and general comfort, after three or four treatments.

One case of chronic sciatica, which had proven very obstinate, received a good deal of relief from pain after a single treatment.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF

PRICE-BROWN, M.D.,

Laryngologist to Western Hospital; Laryngologist to Protestant Orphans' Home.

The section on laryngology and otology of the British Medical Association, Montreal, was attended principally by leading English and American specialists, there being only a sprinkling of Canadians, fully one-half of the whole number being from the other side of the line.

The proceedings opened by an important and interesting discussion on "Turbinotomy." It was led by the president, Dr. Greville Macdonald, and ably supported by Drs. Delavan, Camralt Jones, J. N. Mackenzie, Lincoln, and others. The general opinion expressed by the representatives from both sides of the sea was in condemnation of too severe operations upon the turbinated bodies. Complete turbinotomy was believed to be very rarely required—while partial removal, or turbinectomy, was, in many instances, necessary. It was evident, from the discussion, that American rhinologists do not practise turbinotomy to anything like the extent that it is advocated by certain of their confrères in England. Possibly the humidity of the British climate, in comparison with the dryness of the American, may form an important factor in rendering the operation more justifiable in the one country than the other.

The second general discussion was upon the significance of "Laryngeal Paralysis." It was opened by Dr. Daly, of Pittsburgh. He said that we could prognosticate recovery from paralysis following diphtheria in from five to seven months. When the paralysis was confined to the left side, we might look for pressure upon the recurrent laryngeal nerve from tumors, aneurism of the aorta, etc. When bi-lateral, it might be of central origin, or from brain-softening, or apoplexy. Paralysis of larynx may also arise from neuritis of laryngeal nerves produced by toxins. Aphonia may be diagnosed as hysterical, only after excluding all other causes.

Dr. Shurly, of Detroit, spoke chiefly of prognosis. Physiological research, regarding the functions of the laryngeal nerves, has made

prognosis more definite now than ever before. Still we are only on the outskirts of the promised land. The laryngeal function is a double one, and has its analogues in the rectum and bladder. All of them act automatically, and are also under voluntary control. Trophic, sensory, and motor fibres are all found in the one nerve. He believes that in hysteria there are structural nerve lesions. Aberration of function cannot occur repeatedly, without lesion of the peripheral nerve leading to the part affected; or of the brain centre. Reflex phenomena are more temporary in their character. Prolonged aphonia, continuing for months, probably in most cases depends on lesion. When the lesion is in the nerve itself, particularly in the case of singers, the outlook is hopeful. When, on the otherhand, the lesion is bulbar or cerebral, the prognosis is hopeless.

Mr. Lennox Browne, London, Eng., said that children were less liable to vocal paralysis from diphtheria than adults; and that when it did occur in either, the left side of the larynx was more likely to be affected than the right. When paralysis occurred on the right side, it was usually due to apical disease, either from tubercle or pleurisy. Mr. Browne strongly favored Dr. Shurly's idea, that prolonged vocal paralysis was due, in many instances, to bulbar or cerebral lesions.

Dr. Bryson Delavan, New York, spoke of the difficulty in explaining the significance of right laryngeal paralysis. That of the left was physiologically much easier. Hence right-sided laryngeal paralysis needed the most careful investigation. He cited two cases of unusually persistent paralysis following diphtheria. One had now lasted three years, and the other sixteen years, without any return of the power of vocalization.

Dr. Permewan, of Liverpool, secretary to the section, stated that syphilis is frequently the cause of laryngeal paralysis, either from the presence of gumma in the base of the brain, or from syphilitic, peripheral neuritis in the nerves of the larynx. In general paralysis of the insane, paralysis of the vocal cords is very common. One point in diagnosis he laid particular stress upon, namely, that hysterical paralysis of the vocal cords was always confined to the adductor muscles.

The third general discussion was upon "Operations upon the Mastoid in Suppurative Ear Disease." Dr. Buller, of Montreal, Dr. Buck, of New York, Drs. Blake and Morse, of Boston, and others, entered very fully into the subject, which was further illustrated by exhaustive papers and charts by several of the gentlemen named.

Among other papers read was an elaborate one by Dr. J.N. Mac-

kenzie upon "Physiological and Pathological Relations between the Nose and the Sexual Apparatus." His essay abounded in classical quotations and references to the experiences of the ancients. The main argument was, that in a number of verified instances, excessive irritation of the sexual organs had been productive of immediate abnormal irritation of the nose, and *vice versa*. He likewise drew an analogy between the so-called erectile tissue of the turbinateds and that of the virile organ. It was well known that epistaxis and sneezing were frequently the accompaniments of sexual congress. He also mentioned a case of abortion following galvano-cautery operation on the nose.

Lennox Brown mentioned a case of masturbation in a child affected with adenoids. On removal of the adenoids, without other treatment, the habit ceased. Bryson Delavan related the history of a similar case. Both these instances indicated the existence of the relationship maintained by the writer.

Dr. Fletcher Ingals, Chicago, read a paper on the "Relation of Nasal Disease to Pulmonary Tuberculosis." He believed that there was in some measure an antagonism between pulmonary disease and nasal catarrh; and that there was not that tendency for catarrhal disease to lead to tuberculosis that so many believed to exist. The opinions of the writer were strongly supported by the painstaking, statistical record he adduced. The paper created a good deal of discussion. The speakers, however, while complimenting the author on the lucidity and force with which he expressed his views, accepted them with a certain amount of reservation only.

Dr. Delavan read a paper on "Surgical Diseases of the Larynx." He said the percentage of failures, after operation, was very high. The difficulty of early diagnosis was also great, owing to the fact that simple papilloma may develop into malignant disease. In treatment he insists on the importance of doing tracheotomy, before operating for the removal of the larynx. He did not consider the operation a hopeful one.

Dr. J. N. Mackenzie favored early and complete extirpation of larynx and neighboring lymphatic glands, and was more hopeful in prognosis after operation than the writer of the paper.

Dr. Baker, of Cleveland, also favored radical and complete removal after tracheotomy.

Dr. Roe's paper on "Nasal Deformities" will be referred to later on.

Dr. Wurdeman, of Milwaukee, also read a paper on "Phosphoric Necrosis of Temporal Bone"; and Price-Brown, of Toronto, one on "Chronic Interarytenoid Laryngitis."

Dr. C. H. Knight, of New York, also forwarded a paper on "Foreign Body Removed from Larynx by Laryngo-Fissure." In the absence of the author this was read by Dr. Birkett, of Montreal.

"SADDLE-NOSE," AND OTHER EXTERNAL NASAL DEFORMITIES.

During the last few years many surgeons have attempted, and some of them with marked success, to rectify these unsightly deformities. The methods of operation have been various, and some of them of a most radical nature. Total rhinoplasty, where the defective septum has been reproduced from the flattened bridge, and the external nose re-formed by integumentary flaps from the forehead, have been unsatisfactory; the new nose not only sinking, but also shrinking more and more, from lack of definite and firm support. Ollier and Langenbach and König all tried to remedy this, by taking slips of bone, from either the superior maxilla or the frontal, to help to support the softened tissues.

It remained for Schimmelbusch, of Berlin (*Verhandlungen der deutschen Gesellschaft für Chirurgie, 1895*), to form the framework of a new nose entirely out of bone. He endeavored to construct it as nearly as possible after the plan of the natural organ; so that it would have firm walls, and a proper integumentary covering. He performed the first complete rhinoplastic operation five years ago. Schimmelbusch and Von Bergman have since then operated upon twelve patients by this method. The success is reported as remarkable. All the noses have retained their form. The profile, height and lumen have remained without shrinkage. As no complications have appeared, Schimmelbusch warmly recommends the method. (*Laryngoscope.*)

To perform the operation for complete rhinoplasty, in cases where the nose, from traumatism or disease, has been destroyed, a three-cornered skin and bone flap is dissected from the forehead, the wide base being uppermost, and the narrow end at the root of the nose, which, of course, remains attached. With a broad and sharp chisel, the anterior surface of the frontal bone is chiselled off. This is the most difficult and delicate part of the operation. The loosened flap is first allowed to granulate. Then the bony flap is sawed perpendicularly on its inner surface, folded together in the form of a nose, twisted over, transplanted, and sutured on to the prepared wound—the skin side being external. In these cases the septum, if possible, is formed beforehand from the remains of the original nose, the tip being reserved for attachment to the new

organ. To keep the new bones from spreading, a silver wire is passed through them from side to side, and held in position by lateral buttons. This is retained until the parts are firm enough to admit of its removal.

Schimmelbusch's operation for saddle-nose, although in principle the same, differs somewhat from the above. The skin and bone flap is made in the same way; but the saddle-nose is split down the centre, raised on each side, and deflected outwards. The bone of the flap is sawed along its centre as before, but doubled in the opposite direction. It is then bent directly over and placed in position, the skin being internal. The lateral flaps of the original nose are then stretched and replaced over the raw surfaces of the new support. At first they do not entirely cover the nose but, as healing progresses, and the flap is separated at the bridge, a good form is eventually secured. The raw cavity in the forehead is recovered by stretching and suturing, after linear incisions of the integument.

The Italian Method. (*Bull. de l'acad. de Méd. de Paris*). Berger strongly advocates the method of operating successfully practised by Tagliakozza and Graefe. He has followed it with excellent results in two cases. The required rhinoplastic flap was obtained from the arm bound to the head, and retained in position by Berger's special fixation apparatus. In each case the patient submitted to the fixation for the required ten days, with but slight inconvenience.

Jormeseo (*Neuvieme Congrès Francaise de Cher.*, 1895), performed complete rhinoplasty by the Italian method in a young man æt. 25. It was performed after the removal of an enormous acneiform hypertrophy, involving the whole nose. The arm was held in position by plaster bandages. Good results followed.

Prof. Czerny, of Heidelberg (*Verhandlungen der deutschen Gesellschaft für Chirurgie*, 1896) gives the history of two cases, where he successfully corrected saddle-nose of a mild degree, by the formation of a bridge from the chondro-osseous lateral wall of the nose. Although ultimately successful, the operations were difficult, and it took a long time for the new noses to lose their sharply-defined anæmic appearance.

For the correction of saddle-nose, Soles Cohen (*Jour. Lar.*) advocates the use of an artificial nasal saddle made of platinum. First, Rouge's operation, sliding the upper lip and nose upwards, must be performed. Then the saddle introduced, with the prongs fitted through the mucous membrane into the maxillary bones; and the

soft parts at once restored to their normal position. The combined operation must be completed at once, otherwise the swelling will prevent a successful result. Some contraction of the nares follows, necessitating the use of bougies for a while, but the result in the end is satisfactory.

C. H. Knight (*New York Med. Jour*) reports a similar operation by the use of Martin's bridge. In his case, the result for a time was highly satisfactory. Cicatricial contraction of the nares occurred, however, during the author's absence. Operative measures were resorted to, and the patient given a vulcanite tube to keep the passages open. By the use of undue force, he displaced the bridge, causing it to ulcerate through the skin. Although this case resulted unfortunately, Knight still expects good results in properly selected cases.

Roe, of Rochester, (*Med. Record*, June, 1897) has an article entitled, "The correction of depressed and saddle-back deformities of the nose, by operations performed subcutaneously, without the aid of metallic or other artificial supports." The author deals with cases in which there is an entire, or almost entire septum, but in which from traumatism of one form or another, nasal deformity has been produced. He details the history of six cases, all differing materially from each other.

At the Laryngological section of the British Medical Association, in Montreal, he again read his paper, and illustrated it by life-sized photographic plates, taken before and after treatment, all indicating marked cosmetic improvement.

In all cases the operations were done subcutaneously, to avoid facial scars—the main object being to transfer superabundant tissue, present in some part of the nasal organ in all the cases, to the situation where its presence was most required. Thorough aseptic and antiseptic measures were always used; and the support varied according to the requirements of each case. It always required time to accomplish a good result, and the main operations had usually to be supplemented by minor ones. Still, the manifest improvement in the personal appearance of the patients operated on, was a direct reward for the patience and vigilance required in treatment.

HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

WILLIAM OLDRIGHT, M.A., M.D. Tor.,

Professor of Hygiene in the University of Toronto ; Surgeon to St. Michael's Hospital ;

ASSISTED BY

J. W. SMUCK, M.D.

REPORT OF PROVINCIAL BOARD OF HEALTH FOR JULY.

Total number of municipalities in the province, 745 ; number which made returns for July, 429.

Table showing total deaths returned from the several contagious diseases for a population of 1,296,089 were 167, or at the following rate per 1,000 for municipalities which made returns, calculated on a per annum basis. (Total population of the province, 2,233,117.)

	Population and % of whole.	No. of deaths from and rate per 1,000 per annum.						
		Scarlatina.	Diphtheria.	Measles.	Whooping Cough.	Typhoid Fever.	Tuberculosis.	Total.
Cities reporting.	419,972 (92%)	3 (0.08)	12 (0.3)	1 (0.02)	0	4 (0.1)	51 (1.4)	71 (1.8)
Towns and villages reporting.	235,017 (55%)	1 (0.05)	4 (0.2)	0	4 (0.2)	2 (0.1)	17 (0.8)	28 (1.4)
Townships reporting.....	641,100 (57%)	3 (0.05)	13 (0.2)	4 (0.07)	2 (0.03)	3 (0.05)	43 (0.8)	68 (1.2)
	1,296,089 (58%)	7 (0.06)	29 (0.2)	5 (0.05)	6 (0.06)	9 (0.08)	111 (1.02)	167

Editorials.

THE MEDICAL COLLEGES OF TORONTO.

THE two Medical Colleges of Toronto were opened on Monday, October 4th. Trinity made a new departure by having the opening exercises in the pavilion of the Horticultural Gardens, where the Rev. W. J. McCaughan delivered the introductory lecture. The building was well filled with an audience composed of students, and a large number of their friends. The lecturer, who is well-known as one of our most powerful pulpit orators, chose as his subject—"Manliness," and delivered an excellent address, which was highly appreciated by those present.

The opening address in the University of Toronto was delivered by Professor I. H. Cameron, who referred to the recent visit of Lord Lister and Professor Michael Foster whom he extolled as models of the medical profession. He then spoke of the past year as remarkable on account of the Diamond Jubilee of Her Majesty, the meeting of the British Science Association, and the meeting of the British Medical Association in Montreal, and also, because of the fact that the Medical Faculty of the University, which has been pursuing a tentative, if not precarious, existence for ten years past, has at length become established as a fixed and integral portion of the institution. After making reference to the Chancellor, and the late Dr. W. T. Aikins, he went on to speak in a general way about the "medical calling," and the importance of culture therewith.

In conclusion he referred to the question of a college residence as follows: "I would lay infinite stress upon the value of college residence, and the humanizing influence of the common dining hall. Could I have my way, the land north of Hoskin avenue and east of Devonshire place would be for the most part covered with residences, each with its resident Don or Dons, and all with a common Dean: on the west side of Devonshire place, at the corner of Hoskin avenue, should be common dining halls, and a great hall of convocation, and in these colleges and halls all the undergraduates in all

the faculties should be required to live, and every professor should eat so many dinners in the halls per term. The idea may seem Utopian and provoke a smile, but I am satisfied that if some of our moneyed men in the Senate or elsewhere would take up the scheme, and conduct it on a business basis a fair return would be derived from the capital invested." Dr. R. A. Reeve, the Dean of the Faculty, after a few general remarks to the students, announced the presentation by himself of \$1,000, to be divided into four annual instalments of \$250 each, and to be awarded as an honorarium to the student who takes the highest stand in all the subjects included in the fourth year of the medical course.

After short addresses from the Chancellor and Vice-Chancellor this very interesting function came to a close.

WEST TORONTO TERRITORIAL ASSOCIATION.

A MEETING of the West Toronto Territorial Division Medical Association, Dr. Machell in the chair, was held on the 25th September last at Broadway Hall, to which all the regular practitioners were particularly requested to attend. After routine business was transacted a deputation, with Dr. W. W. Ogden as chairman, was appointed to interview the mayor concerning a new rule of the Council or the Health Board by which the health officer is compelled to attend gratuitously civic employees—firemen, scavengers, Board of Works employees, etc.—who may be ill or injured. It was thought that in a city the size of Toronto there would be administrative work enough to occupy fully the time of the health officer without his being compelled to run out every now and again to attend a sick scavenger or an injured fireman. Such a rule is neither in the interest of the city, for the health officer cannot give his best attention to the work of his department if his time be encroached on by purely professional visits, nor in the interest of the employees, for such attendance must necessarily be hurried and of a perfunctory character. We have nothing to say against Dr. Sheard, or we are persuaded that he has been compelled to do this work against his better judgment, and for which he does not get any increase in salary. But Dr. Sheard must know that he is doing an injustice to a number of hard-working, conscientious fellow-practitioners by taking out of their hands their own regular patients. He probably protested when asked by the council to be a party to compelling our patients to be seen by him, but if so the profession at large have no knowledge of the fact. Now that the West To

ronto Association has taken the matter up it is to be hoped we shall be able to find out whether the scheme originated with the Health Board, the Board of Control, or the Council. The time is opportune for enquiring into it—the election for aldermen is not far distant. Abuses of this kind always receive more careful consideration prior to than subsequent to a municipal election.

It seems an anomalous condition of things that the profession should be taxed to provide a health officer, and that he, in turn, should be compelled to supplant us in the attendance on men who have looked upon many of us as the family physician for nearly a quarter of a century. We hope that Dr. Ogden's committee will get to work and put the matter fairly before the council, keeping in view the interests of the city, the workingmen, and last, but not least, the medical profession.

Another matter which came up for consideration was the resignation of the chairman as representative of the division in the Medical Council. He informed the association that he had, a few days previously, been notified of the appointment made last spring as lecturer in Pædiatrics in the Medical Faculty of the University of Toronto, and before accepting it, it would be necessary to resign his position in the council. The Medical Act expressly states that certain universities shall have a representative in the council, and just as expressly declares that no professor, lecturer, or teacher of any of these universities shall hold a seat in the council, except as a representative of the university or college to which he belongs. Having decided to accept the lectureship, he thereupon tendered his resignation to the association as their representative in the council, asking that the secretary be instructed to forward it to Dr. Pyne. He also thanked the profession for the honor they had done him three years ago in electing him unanimously as their standard-bearer.

It was suggested that as the meeting was a fairly well attended one—it is surprising how little interest the profession, as a whole, takes in its own affairs—that the matter be talked over calmly and quietly, and if possible, select some one who would be acceptable to the majority of the profession in West Toronto. Two names were mentioned after some deliberation—that of Dr. James Spence and Dr. Alex. Davidson. Finally it was proposed by Dr. Milner, and seconded by Dr. Davidson, that Dr. Spence be nominated as their representative for Dr. Machell's unexpired term. Dr. Spence's nomination was thus made unanimous, and was accepted by him.

Correspondence.

Victoria, B.C., Sept. 25th, 1897.

Editor CANADIAN PRACTITIONER.

SIR,—Not many months ago a Toronto medical man, while discussing the advantages offered by British Columbia in the practice of medicine, remarked that “the Victoria men are not up to much.” Whatever truth there may or may not be in this statement, and however personal it may or may not be, I thought it would make an excellent text upon which to base a short report of some of our surgical work.

We have two excellent hospitals, modern in all equipment, vieing with each other for the patronage of the city, one under the Sisters of St. Anne, the other our city and provincial. In order to give your readers some idea of our work, I give the following results of the major surgery of the city (Jubilee) hospital during the last six months, which represents but a slight fraction above one-half of the major surgery done in Victoria during this period.

Cases.—Ovariectomy, 3; salpingo ovariectomy, 6; vaginal ovariectomy 1; vaginal salpingo ovariectomy, 2; vaginal myotomy, 1; ventrofixation, 1; vaginal ventrofixation, 2; vaginal section and drainage, 1; abdominal section and drainage, 1; vagino abdominal hysterectomy, 1; nephrorrhaphy, 2; colotomy, 3; pylorotomy, 3; proctectomy, 2; hermotomy, 10; appendicectomy, 18; excision of breast, 3.

Of these sixty operations, fifty-seven resulted in recovery and three in death. Of the latter one death followed pylorotomy for malignant growth, and two deaths followed appendicectomies.

In a city of less than 18,000 population, this report speaks for itself. Our staff consists of twelve physicians, all upon equal privilege *re* the hospital.

With such surgical successes as this report sets forth, our citizens are beginning to appreciate the hospital and recognize its true relation towards the community. Rarely is any opposition offered by the patient when the attendant suggests removal to the hospital.

It has become settled in the minds of Victorians that the hospital is the place for sick people. Very little but emergency work is done in the home, consequently the professional nurse have a very limited constituency. Emigrants of this class had better seek a field where hospitalism is less developed, rather than come here to meet with dissatisfaction.

Although diverse upon many points of practice, one thing we are agreed upon—the necessity of prompt action in appendicitis. This may seem an old story, but the lesson is not yet half learned by the profession. Delay means but ignorance fooling with death. Space will not allow reports of individual histories in which gangrene, perforation, general peritonitis lay unsuspected by men whose diagnostic skill could not be challenged. Our experience has convinced the most conservative that here “delays are dangerous.” Patients presenting symptoms of this “friend of the physician, during terms of financial depression,” as Keen terms it, are at once placed in the hospital. If it be a second attack, or if the symptoms are sufficiently definite the operation is at once proceeded with. If there be any doubt, and the symptoms do not subside after the bowels are cleared, the same treatment is followed. Rarely is a case allowed to wait thirty-six hours after the first appearance of the symptoms. In no other condition does there seem to be the same disparity between the trouble within and the manifestations without. In order that the patient receive justice at the hands of his attendant, each case, howsoever “mild” should be considered the worst. No method of diagnosis yet elaborated can give the most skillful any adequate conception of appendicular pathology. Pulse, pain, temperature and rigidity may fail in their efforts to interpret the activity of this abdominal demon.

In this wild and wayward west the practice of medicine will soon become that of surgery. The time-honored and beloved family physician will soon be eliminated and numbered with the things that were, and his place taken by the sanitarian, the accoucher and the surgeon. Poulitice, pill, and blister are rapidly vanishing before the evolution and application of biological principles. Recurrent colic vanishes with the appendix, and indigestion after resection of the pylorus. Peritonitis is but a secondary manifestation, and the physician who writes “inflammation of the bowels” upon a death certificate is advised to go sealing.

E. M. H.

Meetings of Medical Societies.

ONTARIO BOARD OF HEALTH.

THE regular quarterly meeting of the Ontario Board of Health was held in the secretary's office, Toronto, on Friday and Saturday, July 23 and 24, for the purpose of passing the plans for sewers and waterworks in some towns.

Dr. Bryce, the secretary, read his quarterly report. The report stated that the general sanitary condition of the province during the past quarter had continued good, and that with two or three exceptions no extended local outbreaks of disease had called for extended action.

SMALLPOX.

Cases of smallpox had occurred both in Winnipeg to the west and in Montreal to the east. "The first outbreak certainly, and possibly the second, was due to the introduction of the disease by Chinamen who passed through from Vancouver about the 22nd of May. Although vaccinated, and so personally protected, they seem to have had the infection either on their persons or in their luggage. The Montreal cases occurred at the beginning of July, and the source of their inoculation seems still in doubt.

DANGERS FROM IMMIGRATION.

At present the dangers of smallpox to Ontario are lessened by its inland position, and by the fact that immigrants for the Northwest are most likely to either sicken on shipboard or after they have arrived at their destination. Yet it cannot be overlooked that, as the tide of immigration from both east and west seems again to be setting in towards Canada, dangers which for several years past have been small will again increase. Thus it was reported recently from Winnipeg that a serious outbreak of scarlatina has appeared in a new settlement of Galician immigrants in Manitoba, and the authorities of Winnipeg are seriously alarmed at the prospective cost of having to deal with outbreaks brought to them in this manner.

LEPROSY.

In my recent trip west I learned of three cases of leprosy having appeared amongst Icelandic settlers in that province."

TYPHOID.

In speaking of the outbreak of typhoid fever in Manitoba, which had been introduced from Rat Portage, the speaker said that the undoubted cause of the outbreak was due to the imperfect water supply at Rat Portage, and the defective drainage of the town.

SCARLET FEVER.

The outbreak in Toronto of scarlatina was dealt with, and the epidemic as existing in January last, it was said, had continued to progress. The several months of 1897 had had the following cases reported and deaths occurring:

	Cases.	Deaths.
January.....	104	3
February.....	172	13
March.....	265	15
April.....	205	11
May.....	212	11
June.....	180	10
July (to date).....	50	..
Total.....	1,188	63

The report continues: "It thus appears that for the first time during fifteen years Toronto has been visited with a widespread outbreak of scarlet fever, and it is of much interest and of the greatest importance where the Province has been practically free from this disease for so long a time to review some of its chief characteristics. Its history shows it to be a remarkable disease. Its mortality in London from 1859 to 1870 was variable, but reached its height in the latter year, the death rate being 1.22 per 1,000, and dropped in the succeeding year to .27. Since that year the death rate per 1,000 has with slight variations steadily declined."

After summarizing the principal facts associated with any epidemic of scarlet fever the epidemic of the last six months in Toronto was examined in connection with the various points. Of the 1,138 cases which occurred up to the end of June, 35 to 40 were treated in the hospital, and the balance were treated in their homes. The total death rate was 5.3 or 5.5 per cent. Taking the returns for the month of May, supplied by the City Health Officer up to the 6th of

of June, there were in all, 280 cases. Of these, 198 attended school.

To show the extreme importance of the public schools in the spread of infection, the Medical Health Officer, of London, makes a table, with three groups ; first, under 3 years ; second, from 3 to 13 ; third, over 13, and compares the prevalence amongst them for the month preceding, the month of the summer holidays, and the month succeeding, with the result :

Under 3, decrease in holiday month, 1 per cent.; 3 to 13, decrease in holiday month, 26 per cent.; over 13, decrease in holiday month, 13 per cent.

Increase in succeeding months :

Under 3, 4 per cent.; 3 to 13, 65 per cent.; over 13, 26 per cent.

It is thus made apparent that the results of the numerous modes of communicating infection amongst the infant population under 5 years, or 11 per cent. of the whole population fails to create an increase or decrease in any month exceeding 4 per cent., but that the absence of the school influence at once makes a decline of 26 per cent., and a subsequent immediate increase of 65 per cent.

The following principal reasons why the outbreak should have made such headway in so short a time were examined. They were as follows :

(1) That there had existed a population in Toronto at least up to 15 years of age largely unprotected by a previous attack.

(2) That the disease was at first mild, but not as mild as the London cases. The percentage of deaths to notified cases was 4.7 in London. In Toronto it has been 5.5 per cent. for six months.

(3) The non-reporting of mild cases in some instances early in the disease.

(4) To the non-notification of the public of infected houses by the Health Department.

(5) The re-opening of infected schools within too short a period after closing.

(6) To the comparatively few instances where the infected child has been removed from its home to the Isolation Hospital.

(7) To the too short time during which cases and members of the household have been kept from the public and school.

(8) To the lack of any systematic method of inspection of the 500 and more farms and dairies from which the milk supplies of the people have been taken.

The last of these causes was considered at considerable length and the following

RECOMMENDATIONS

to the Local Board of Health were carried :

(1) That it should, on being notified of any case of scarlatina, require the immediate removal of the case to the Isolation Hospital.

(2) That should this not be at once complied with, the household be quarantined until the six weeks from the occurrence therein of the last case shall have elapsed, and the house be placarded.

(3) That inasmuch as your committee is informed that the Isolation Hospital wards of the city set apart for scarlatina have been full during the past six months, and that they have proved wholly inadequate for the demands upon them, that the Local Board of Health be directed to supply itself with such additional hospital accommodation as is required under the act.

(4) That the board be urged to extend systematic inspection to every dairy or farm sending milk into Toronto, as is the practice in other cities of the Province, the freedom to inspect such being the condition on which a permit to send milk into the city be granted.

In conclusion, your committee, in notifying the city health authorities of Toronto of its recommendations, desires that the board express its anxiety and willingness to lend every assistance within its power to mitigate and, it is hoped, finally stamp out the serious epidemic which exists at present.

RABIES.

Mr. J. J. Mackenzie, analyst of the board, read a report urging the necessity of municipal regulations dealing with the disease. He pointed out that it was of comparatively recent date in Ontario, where it first made its appearance in 1891. It seemed to confine itself to the section of the province between Hamilton and London. Its introduction had probably been from Europe by way of the United States. That it is not a general, but rather a local disease is proven by the fact that it does not exist in Australia. The thing to be faced in Ontario was the fact that the disease actually existed here and that a human being had died from it in Dundas recently.

It was necessary that municipalities should unite on the matter since a rabid dog took a lengthy course through various districts, biting other animals which came in his path. Indiscriminate muz-

zling was unnecessary, but all dogs should be muzzled at the time of an epidemic in the district. Various provisions existed in Europe for killing rabid dogs and shutting up dogs that they had bitten until the time of incubation for the disease had been passed. Some such measures as these should be adopted. Mr. Mackenzie pointed out that the idea that rabies was a hot weather disease was false, since it occurred with equal virulence in winter time.

A resolution embodying Mr. Mackenzie's suggestions was carried.

ABUSE OF HOSPITAL CHARITY.

Mr. John Ross Robertson, M.P., spoke regarding the indiscriminate admission of charity patients to hospitals. He showed that the privilege was very badly abused, and asked the board to try and formulate a remedy.

CANADIAN MEDICAL ASSOCIATION.

THE thirteenth annual meeting of the Canadian Medical Association was held in the Synod Hall, Montreal, on Monday, August 31st, when Dr. James Thorburn, of Toronto, resigned the chair to the newly elected President, Dr. V. H. Moore, of Brockville. Dr. Roddick, chairman of the local committee, having welcomed the visitors to Montreal, Dr. Moore delivered his presidential address. He referred to the formation of the Association, just one hundred days after the formation of the Dominion, and to the election of Dr. Tupper, now Sir Charles Tupper, as the first president. He sketched the objects of the Association, which was established to promote the science of medicine, to unite the members of the medical profession in the Dominion of Canada, and to secure a uniform standard for medical education and for the license to practise in the Dominion. While the Association had been successful in attaining the two objects first named, the third has not yet been reached. Canadian medical institutions required as high, and in some instances, a higher standard of preliminary education than was demanded in Great Britain. A four years' course, and in Ontario a five years' course was already required, and in two years' time the fifth year, which was to be spent in clinical and technical work, would be obligatory. Finally the examinations for graduation and for the license to practise, were well calculated to test the knowledge of candidates. Canadian medical colleges were well equipped, the teaching they gave was of the best, the

practical instructions excellent, and the clinical opportunities plentiful. There were between sixty and seventy hospitals in Canada and over forty in Ontario alone, while there were a dozen well-equipped universities and a large number of collegiate institutes and well provided schools. In concluding his address Dr. Moore extended to the members of the British Medical Association a most cordial and sincere welcome. He trusted that they would not only derive advantage from the scientific discussions which would take place and carry away a warm memory of the hospitality of Montreal, and of Canada at large, but would also gain a knowledge of the resources of Canada, and would learn to appreciate its free institutions and the enterprise and industry of its people. The President received a warm vote of thanks for his address, and after the transaction of some formal business, the Association proceeded to the consideration of a scheme of inter-provincial registration. A report recommending the formulation of an agreement was adopted, and it was resolved that the Canadian Medical Association should meet next year in Quebec under the Presidency of Dr. Beausoleil. Dr. H. B. Small, of Ottawa, was elected treasurer, and Dr. F. N. G. Starr, of Toronto, was re-elected secretary.

Book Reviews.

A SYSTEM OF PRACTICAL MEDICINE. By American authors. Edited by Alfred Lee Loomis, M.D., late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University. To be completed in four imperial octavo volumes, containing from 900 to 1,000 pages each, fully illustrated in colors and in black. Vol. II., comprising Diseases of the Respiratory System—Diseases of the Circulatory System and the Mediastinum.—Diseases of the Blood—Diseases of the Bladder and Prostate Gland. Per volume, cloth, \$5 ; leather, \$6 ; half-morocco, \$7. Lea Brothers & Co., publishers, Philadelphia and New York.

The first volume created so favorable an impression that the appearance of the second was looked forward to with much interest. If we had not exhausted our encomiums on the former, which is certainly one of the best works upon the infectious diseases in the language, we might say more in praise of its successor. In the subjects treated in this volume there is not so much progress to report, and we, therefore, cannot look for so much that is new. Space will not permit a review of the various articles, and amongst the general excellence one finds it hard to draw special attention to one article lest it should be assumed that the others are less worthy of commendation. But the general practitioner will be particularly pleased with the very practical articles upon "Diseases of the Blood," by Shattuck and Cabot, of Boston ; and upon the "Diseases of the Nose, Naso-pharynx, and Larynx," by S. Edwin Solly, of Colorado Springs, since they cover ground with which he is, perhaps, less familiar than that covered by many of the other articles.

The volume carries out the promise of its predecessor, and among the many subscribers with whom we have discussed the work we have not met one who is not well pleased with his purchase.

DIAGNOSIS OF THE ACUTE EXANTHEMATA, WITH ESPECIAL REFERENCE TO SCARLET FEVER. Dr. Rotch in the *Boston Medical and Surgical Journal*, May 27, 1897.

Many of the complications including nephritis are due to streptococci. The earlier in the course of the disease nephritis appears the more severe will be the type. Amount of albuminuria is of less consequence than the quantity of urine. A rapid diminution of the urine is ominous. During the course of a general œdema, desquamation may

cease to return again on the disappearance of the œdema. When the œdema is slight the nephritis is of a slight grade. Effusion into the pleura may occur, also œdema of the lungs and brain. The nephritis of scarlet fever has a tendency to ultimate recovery in childhood on account of their recuperative power. It is very rare for it to become chronic. Retinitis and amaurosis may occur. Concerning diuretics, non-irritating ones must be used, and the best is potd. acetate. Cathartics are more reliable than diuretics, and he mentions podophyllin gr. $\frac{1}{10}$ to a five year old child and repeated. Also pulv. jalapæ co. in ten grain doses. If the skin is hot and dry use a hot bath and follow it with a dry hot blanket pack. Pilocarpin hydrochlorate, gr. $\frac{1}{20}$ by the mouth to a child two years old, and hypodermically to a five year old child. If convulsions occur an enema of Pot. Bron. and Chloral hydrate. Digitalis is a valuable remedy in the treatment of the nephritis of scarlet fever, best given as a freshly prepared infusion in one drachm doses every four hours to a child five years old.

THE MENOPAUSE. By Andrew F. Currier, A.B., M.D., New York. D. Appleton Company, New York. 309 pages.

The author begins his preface by saying that it is many years since an original work on the menopause has appeared in the English language, and thinks it high time that a lot of hoary tradition which has done duty for years both among the laity and the profession should give way to more modern ideas and conditions, and that the sooner this occurs the better it will be for humanity. He thinks the serious character of the menopause has been over-estimated, and quotes his own practice, both private and hospital, in support of his contention. The fact that malignant disease develops at this time does not prove that the menopause is responsible for such development. In regard to cancer it does not develop because menstruation has ceased, but because the vitality of certain tissues is diminished and their ability to resist irritation lessened.

In chapter II. is discussed the anatomical changes which are the result of the menopause. The author calls attention to the fact that uterine hæmorrhages, as a rule, do not cease with the menopause, contrary to the opinion of the majority of the profession, who encourage their patients to hold out till the trying ordeal of the menopause should occur. As a result of this hope held out many lives have been sacrificed.

The author maintains that there is a normal—that is, an uneventful—menopause, and that if there is no pre-existing foundation of disease, the menopause should not be considered critical in the sense that it is dangerous to life or health. In chapter IV. he discusses the morbid phenomena, especially the vaso-motor and gastro-intestinal disturbances. Chapter V. is devoted to the premature menopause. By this term he means that variety brought about by surgical means and a small

class of cases which occurs a few years in advance of the normal time, which is placed at the fortieth year. The question of the loss of sexual desire following removal of the appendages is taken up and dealt with, the conclusions agreeing with the great majority of clinical teachers of to-day.

In regard to treatment he advises carefulness and watchfulness, not ignorant inactivity as in times past. Particular attention is called to profuse hæmorrhages, which are not physiological, but are evidence of disease, and should always receive careful investigation. He concludes in these words: "Those who are sick must be treated upon rational principles, not by superstition or tradition. Surgical conditions should be recognized promptly and promptly treated; and those which are susceptible of relief by drugs should receive remedies which are tried and reliable, not the nostrums and cure-alls of the quacks."

The print is large, clear, and readable, and the index all that one could desire.

Medical Items.

TERRITORIAL DIVISION OF WEST TORONTO.—West Toronto has now no representative in the Ontario Medical Council on account of the resignation of Dr. Machell, as mentioned in another portion of this issue. There are now two candidates in the field. Dr. James Spence was asked to become a candidate, September 25th, and consented. On the following day a number of residents of the division induced Dr. Jas. H. Burns to become a candidate. Dr. Burns was for some years a member of the council, was vice-president of that body in 1887-8, and president in 1888-9. Both of the candidates are strong men with good backing, and either will make a good representative.

RAILWAY HOSPITAL CARS.—The latest novelty in foreign railroad-ing is the hospital car, designed to serve a double purpose. In the event of a serious accident, these cars can be run to the place of the disaster, where the injured may be picked up and carried to the nearest large city for treatment, instead of being left to pass long hours at some wayside station while awaiting surgical attendance. It also enables the railway companies at certain seasons or upon special occasions to transport large numbers of invalids to health resorts or places of pilgrimage. The interior of the car is divided into a main compartment, a corridor to one side, and two small rooms at the end. The largest compartment is the hospital proper; it contains twenty-four isolated beds. Each patient lies in front of two little windows, which may be closed or opened at will. Each bed is provided with a movable table, and a cord serves to hold all the various small objects which the patient may require. The corridors on the outside lead to the linen closet and the doctor's apartments. Various trap doors in the floor, when opened, disclose to view an ice chest, a compartment for the disinfection of soiled linen, and a provision cellar. If necessary, a portion of the hospital chamber may be transformed into an operating room for urgent cases. Finally, as customary abroad, a small chapel for religious worship is provided. This car will be put in charge of a surgeon and nurses, and will be chiefly used to carry invalids from Belgium direct to the health resorts of France.—*Baltimore Sun*.

OBITUARY.

J. F. DANTER, M.D.—Dr. Danter died at 32 Gloucester Street, Toronto, September 24, 1897.

JAMES ACLAND DE LA HOOKE, M.R.C.S., Eng.—Dr. De La Hooke died at his home in Toronto, September 18, 1897, in his 83rd year. He received the diploma of membership in the Royal College of Surgeons, England, in 1838. He was well known in military circles, having been connected with the Queen's Own Rifles for many years. For a time he was medical officer of the Niagara camp.

J. J. C. HUME, M.B.—Dr. Hume died at the residence of his father, the Rev. Robert Hume, 6 Carlton Street, Toronto, September 8, 1897, aged 22. He received his medical education in the Medical Faculty of the University of Toronto, graduating in the spring of 1897. He took honors throughout his course, together with a scholarship in 1895, and a silver medal in 1897. Although never strong he was a very earnest and intelligent worker, and it is generally supposed by his friends that over-work caused the disease—phthisis—which resulted in death. He was, in all respects, one of the best and brightest men in his class, and his untimely death is very deeply deplored by his many friends, including students, graduates, and members of the medical faculty.

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Original Communications.

PRESIDENT'S ADDRESS TO THE TORONTO PATHOLOGICAL SOCIETY.

By H. B. ANDERSON, M.D., C.M.

Professor of Pathology, Trinity Medical College. Pathologist to Toronto General, Royal Victoria Hospital for Sick Children, and Western Hospitals.

GENTLEMEN,—In assuming the duties of President of the Pathological Society for the ensuing year, allow me to thank you for the honor you have done me by electing me to the position. I appreciate the distinction the more on considering my predecessors in the office, since the organization of the society-men who, by long years of faithful service in the profession, have won for themselves respect and distinction.

I fully realize that many others of our members, by reason of age and experience as well as by services rendered the society, are better qualified and more deserving than myself to preside over your meetings.

However, since it has been your pleasure to elect me, I shall earnestly endeavor to discharge the duties of the office in the best interests of the society and acceptably to you.

If time and attention given to the promotion of the society's welfare can atone for many other deficiencies, they will be cheerfully given, relying at all times upon your kindly counsel and hearty support.

The personal responsibilities of the position will be greatly lessened by the good fortune that has associated with me on the Executive Committee men who have always given the society their faithful service, and are enthusiastic in furthering the objects for which it was organized.

During the coming year your committee will aim at providing programmes of as high a standard of excellence as possible, in which object they will expect the full co-operation of all the members. In this connection I would remind you of the article in our by-laws which requires that each member shall submit at least two communications to the society each year. As you will be called on for these during the session, you are asked to accept this as timely notice, that you may have ample opportunity for their preparation. If I may be permitted the observation, we would ask that each member make a special effort to present cases or specimens as fully worked up as possible, which will be greatly to our mutual advantage by giving as high character as possible to the proceedings of the society. To this end, before each meeting longer notice than heretofore will be given, as no doubt we all have felt that the short time left for preparing a subject has not always allowed the full and careful attention we would have desired to give it. Your committee have also asked me to direct your attention to the clause in the constitution which requests "that in the remarks made in reference to specimens exhibited, all discussions on the topics of diagnosis and treatment shall be avoided, except in so far as they illustrate the pathology of the subject."

That we may preserve the individuality of this as a pathological society, it is necessary to bear this in mind. If the rule is not religiously adhered to, the object had in view by those who founded the society—viz., to promote and facilitate the advancement of pathology—will be defeated.

In the discussion of the various subjects members are asked to write on the sheets furnished for the purpose the remarks they desire for publication. This plan, which I believe has been successfully adopted in other societies, will not only lessen the rather arduous duties

of the recording secretary, but will enable us to have more accurate reports of the meetings for publication.

In concluding my preliminary remarks, I can only express the wish that during the coming session the interest heretofore taken in the meetings of the Pathological Society may be maintained, and that, as in the past, we may spend a pleasant and profitable time together.

For a short time this evening, I propose to discuss Pathology in its relation to medical practice. This suggested itself to me as a suitable subject, in view of the fact that the membership of the society is composed largely of men who are interested in pathology for its direct bearing on clinical work—for its assistance in the diagnosis, prognosis and scientific treatment of disease.

I also considered it suitable because, even at this late date, there are men in our profession who have no appreciation of the importance of pathology to the clinician—who speak of it as a subject suited to the amusement of the enthusiastic theorizer, but of little use in the field of practical medicine.

These same men, relying upon that cloak for so much ignorance which they affect to call *experience*, will dispute learnedly as to whether a given case is one of consumption or bronchitis, diphtheria or tonsillitis, malaria or typhoid fever, forgetful or unaware of the fact that a comparatively simple examination could place the matter beyond all dispute. Remarkable as it may seem, we all know that such medical Rip Van Winkles actually exist.

One of the greatest benefits pathology has conferred on practical medicine has been to give us an intelligent conception of what is implied by the term—"disease." For centuries and even up unto comparatively late times, not only among the laity, but in the profession itself, a superstitious haze surrounded the idea of disease, attributing its phenomena to a direct visitation of Providence or to the arbitrary workings of supernatural agencies.

As evidence of the lack of any clear insight into the true nature of disease, we need only recall the various fantastic theories, which from time to time were advanced to explain it, and the equally ridiculous—and irrational to us—systems of treatment that were brought forward. So long as men's minds were continually directed to the supernatural, rather than to their own surroundings, for the explanation of the incidence of disease, it was not to be expected that any progress could be made in etiology and consequently none in rational therapeutics. It was almost a religious act to submit with unquestioning faith to what was deemed the will of God. Even yet, showing the vitality

of these superstitious ideas, we not infrequently hear people piously attribute to the decrees of divine Providence sickness and death, resulting from the grossest violation of natural laws and the ordinary rules of sanitation.

Thanks to the fruitful labors of Hunter, Pasteur, Cohnheim, Virchow, and others, the foundation was laid for a more rational conception of disease. It came to be recognized that there is no essential difference between pathological and physiological processes. They are both governed by the same natural laws. Health and disease are both manifestations of life. The laws governing the actions and mechanisms of our organs and tissues are always the same, both in health and disease, but the external conditions acting upon them, and under which they perform their functions, are continually changing, as the diet we use, the climate we live in, temperature to which we are exposed, the occupation we follow, the exercise we take, the clothing we wear, the bacteria to which we are exposed. Fortunately, our bodies have the capacity of accommodating themselves to a greater or less degree to these ever-changing external conditions—compensatory or regulative mechanisms we call them. These regulative mechanisms are possessed by different individuals in different degrees, and constitute what we ordinarily understand as one's "resisting power." Under ordinary circumstances our health depends upon the *extent* and *energy* of the compensatory or regulative powers we possess.

Thus we get the idea of disease, as defined by Cohnheim, as a deviation from the normal or healthy vital processes due to the action of external conditions, which the regulative mechanisms of our bodies are unable to accommodate themselves to, so that the various functions are properly performed. Therefore we understand that there is no such thing as disease in itself, "as a something *imported* into the system, as a possession of it by a *malign agent*, which may be expelled by some sorcery or virtuous herb." It is the vital reaction of the system to deleterious external conditions, and as such is a conservative process tending to the preservation of the organism.

So from the consideration of disease as an *entity*, men's minds were directed to the study of the causes that produce the phenomena of disease. The outcome of this was the wonderful discoveries of Pasteur, Koch, Lister, and others, of the relationship of micro-organisms to the etiology of disease—discoveries that have revolutionized not only the *science* but the *art* of medicine. Etiology now became one of the most important branches of pathology.

Then when it became clearly recognized that we could not alter the mechanism of the organs and tissues of the body, nor the laws that govern their action, but that we have considerable power over the *external conditions* affecting them (and in this power alone had we ability to influence disease), a *definite limit was set to the range of rational therapeutics*. In treatment we have to deal, not with *disease* itself, but with the *causes* producing it. As Albutt says : "Whether the causes be prevented *inside* the body or *outside* it matters not. To kill Laveran's microbe within the body by eating quinine is not to cure an ague, but to prevent the cause of a *future* ague. If we keep clearly before us this distinction between the causes of disease and disease itself, we shall use our remedies more intelligently, we shall see how dominant is the sphere of *preventive* medicine, and that *curative* medicine is often but the ancillary mouse that liberates the body for its own work of recovery."

Not only has pathology given us an intelligent conception of what disease is, led to the great progress made in recent years in etiology, set the limit to our range of action in rational therapeutics, but it has given rise to those wonderful advances in sanitary science which forms one of the most distinguishing features of the nineteenth century. Epidemics which in former days decimated the population, infective diseases which were the scourge of hospital wards, are now practically matters of history.

By its influence in preventing the occurrence of disease, it must also be credited with having had a very direct effect on us as a profession, by very greatly reducing those filthy lucrous tumors, which, in bygone days, so ancient records inform us, were wont to grace the superior antero-external aspect of the femoral region of the medical practitioner. For this service may we be given grace to be thankful.

But apart from these considerations, which have revolutionized medical science as a whole, pathology is of very practical use in the diagnosis, and consequently in directing the treatment of individual diseases, which may now be briefly mentioned.

In the active treatment of disease it has already given us several specific remedies which experience has proved to be of unquestionable value, and the prospects for future results along this line are most encouraging.

Time has confirmed Koch's bacillus as the specific cause of tuberculosis, and its demonstration is now universally used for the early diagnosis of consumption. While the presence of this organism in the sputum may be taken as positive evidence of the exist-

ence of tuberculosis, the failure to find it in a given specimen does not, unfortunately, enable us to say with equal certainty that the disease does not exist.

In genito-urinary tuberculosis, the discovery of the bacillus in the urine renders the diagnosis certain, though from the great dilution, the task is much more difficult, requiring time and patience. The use of the centrifuge and animal experiments are both of great service in its demonstration.

In malaria, the comparatively easy demonstration of the plasmodium in unstained specimens, furnishes us with a simple method for its certain diagnosis. No experienced microscopist, who has once seen this beautiful organism, is likely to misinterpret changes in the red blood corpuscles for it.

Increasing experience with the serum reaction for the diagnosis of typhoid fever seems to justify the early hopes entertained for the usefulness of the method. A positive reaction is given in over ninety per cent. of the cases.

Possible sources of error from an examination of the blood before the agglutinative power has developed, pointing in doubtful cases to the necessity of repeated examinations, and the fact that the blood may retain this power for an indefinite period after convalescence, so that a previous attack of typhoid fever might give rise to erroneous results in the examination of the blood of persons suffering from other diseases must, of course, be given due consideration.

Practical results will probably also be established in the use of the serum diagnosis in other diseases besides typhoid.

The bacteriological examination, though as yet not entirely free from objections, is now generally used for the *diagnosis* of diphtheria. From this same examination, recognizing the association of bacteria, a certain amount of information of prognostic value may be obtained.

In obscure septic cases, the making of cultures from the blood has proved of considerable practical use—cases of septicæmia due to the streptococcus, staphylococcus, gonococcus, pneumococcus, anthrax bacillus, typhoid bacillus, etc., having been cleared up by this means. Where no organism is found the negative results may be of considerable value. The technique is simple, and in such cases as mentioned, the usefulness of the procedure warrants its being more frequently resorted to than it is at present. For the rational treatment of septicæmias by specific serums, its employment becomes a necessity.

In anthrax, an early diagnosis may readily be made by demon-

strating the bacillus in cover slips prepared from the seat of infection, or, if necessary, by inoculation experiments in susceptible animals.

The presence of the gonococcus is generally taken as evidence of the existence of gonorrhœa, though the morphology of the organism alone must not be relied upon. If the other tests—as its presence in the pus cells, its decolorization by Gramme's method, and its cultural peculiarities—are responded to, the diagnosis may be confirmed.

For the diagnosis of diseases of the blood, the introduction of instruments for the estimation of hæmoglobin and for the enumeration of the blood corpuscles has proved of great service. By the use of these instruments, along with the examination of dried blood specimens, the diagnosis can now be made in chlorosis, leukæmia and pernicious anæmia, and an intelligent idea of the condition of the blood in the various symptomatic anæmias obtained. The differential counting of the leucocytes enables us to distinguish the different forms of leukæmia from each other, and from a leucocytosis. While the work of Ehrlich and others has added greatly to our knowledge of the leucocytes, these advances, thus far, have been more of scientific than practical interest, though the future may have good things in store for us, they may, however, throw valuable side-lights in the diagnosis of certain diseases.

Of the clinical value of chemical and microscopic examination of the contents of the stomach I do not propose to speak, as the results here, great as they have been, are as yet of a suggestive, rather than of a positive character.

The same may be said of the examination of the fæces, except that the discovery of the amœba coli clinches the diagnosis in one variety of dysentery.

In urinary analysis the introduction of convenient forms of albuminometer saccharometers and ureameters for quantitative analysis, enables us to easily get results sufficiently accurate for practical purposes. Here, also, the introduction of the centrifuge has proved of great service—a necessity, in fact, for the proper demonstration of bacteria, casts, etc. The application made by Purdy of the use of the centrifuge in the quantitative analysis of the various urinary salts, etc., renders this procedure simple in comparison with the older tedious methods.

Of the histological examination of tumors and other morbid tissues, this is so generally recognized as necessary that I shall say nothing more than to mention the value of the examination of uterine scrapings in the diagnosis of diseases of that organ. This has proved so useful that a more extended use of it is warranted.

In this brief summary I do not pretend to have covered the wide field included in my subject, but sufficient has been indicated to show how essentially pathology is related to the intelligent practice of medicine at the present day.

It would be folly to claim that the advancement made in medical science and practice during the past few years is wholly due to pathology, for the concurrent increase of knowledge in the allied sciences of chemistry and physiology has aided and rendered possible discoveries in medicine which could not otherwise have been attained.

They have all had their part in bringing about what Prof. Richet speaks of as the reconciliation of medicine and science, and as they advance medicine will advance with them.

While most gratifying results have already been attained, much remains yet to be done. How little we still know of the etiology of such common morbid conditions as are found in malignant tumors, or in rheumatism !

Moreover, as in all revolutions so in medicine, the enthusiasm born of newly acquired knowledge and power, while upsetting much that is false, has a tendency to destroy some things that are true. As Albutt well remarks : " The purely scientific physician tends to undervalue opinion as the man of the world overvalues it, and prevalent opinions, though not formal truth, generally contain truth." We are still in the transition period in the evolution of medicine, and it is better for us to hold fast some of the good things, which the accumulated experience of centuries has endorsed, at least, until we can replace them by something better. It is perhaps well, for the present at least, that we have a large conservative element, especially among practising physicians, who temper with " traditional lore " newly formulated opinions and observations until they have been thoroughly tried and proven. Considering what has been accomplished in the recent past, and the present enthusiasm in all departments of medicine, we look forward with bright hopes to the future of what has been called " the most progressive of the sciences."

THE EFFECT OF GRAVITY ON THE CIRCULATION.*

BY R. D. RUDOLF, M.D., Edin.

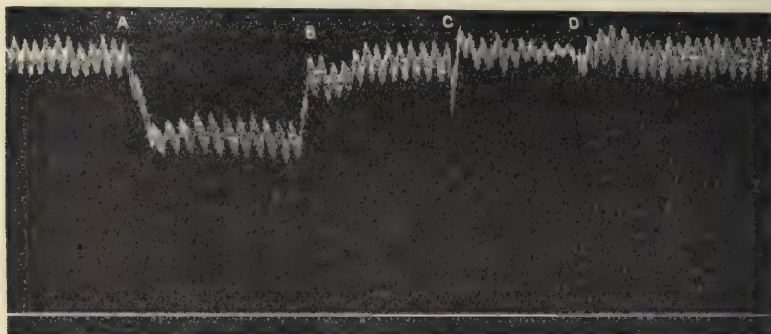
THE effect of gravity upon the circulation has long been known, to a certain extent, and made use of in the treatment of disease, somewhat blindly perhaps, both by the laity and the medical profession. Lately, however, the subject has attracted some attention, and an attempt has been made to investigate the effects of this force more in detail, and, perhaps, it may be not altogether waste of time for us to devote a few minutes to a short *resumé* of the matter.

While everyone is aware of the fact that the force of gravity, unless counteracted in some way, must have an effect on the circulation, it is wonderful how little notice is taken of it by most authorities, and Foster, in his otherwise so complete work on physiology, does not even allude to it. Marshall Wall, in a search on the effects of loss of blood, found that after recovery from a severe hæmorrhage, the syncopal condition could be at once reinduced in dogs by placing them in the vertical feet-down position, then the countenance and eye languish, the head droops, the mouth opens, the respiration is panting, and the heart is scarcely to be heard. Immediate relief was given by reversing the position. To Mr. Leonard Hill, of London, belongs, I think, the credit of having placed the subject on a thoroughly scientific basis. And the tracings here given are taken from his book on "The Cerebral Circulation." The Hyderabad Commission also, with Dr. Lauder Brunton at their head, did numerous experiments showing the effect of various postures on animals during the administration of chloroform.

Looking first at the effects of gravity on the circulation in the lower animals, we find that experiments on dogs, cats and rabbits, show that alteration in the position of the body from horizontal to vertical produces a considerable change in the blood pressure; *e.g.* let the blood pressure be measured by a manometer in the carotid artery of a dog when the animal is in the normal; *i.e.*, horizontal

*Read before the Ontario Medical Association, Toronto, June, 1897.

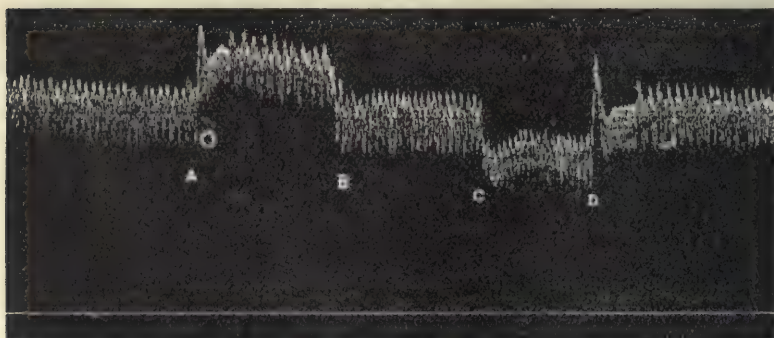
position. Then place him vertically, with the hind feet downwards, and the carotid blood pressure falls promptly.



TRACING I.

A, feet down. B, horizontal again. C, vertical, feet up (note very little effect). D, horizontal again.

Again, measure the pressure in the femoral artery and it is found that this is highest in the vertical feet-down position and lowest in the opposite, or head-down one.



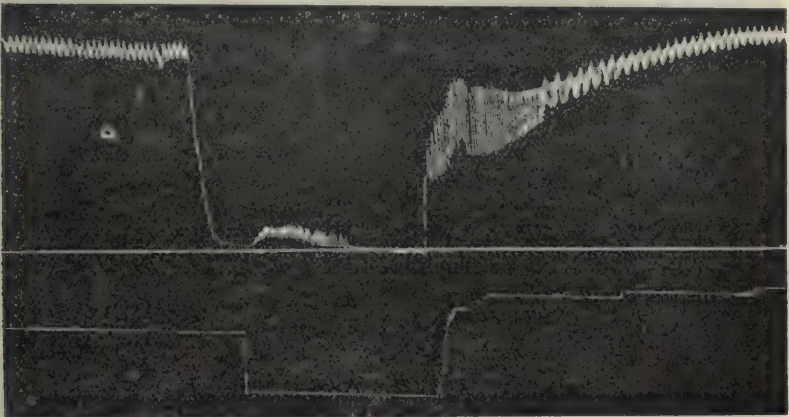
TRACING II.—FROM FEMORAL ARTERY.

A, vertical, feet down. B, horizontal. C, vertical, feet up. D, horizontal.

It was further found by Hill that the pressure in the femoral and the splenic *veins*, *i.e.*, in the systemic and portal venous systems, varied in an even more marked manner under the influence of gravity, showing, as we would expect, that the venous circulation is even more under the influence of this force than is the arterial.

As has been conclusively proved by physiologists, it is the portal system of blood vessels, presided over by the splanchnic

nerves, which specially is concerned in the upholding of the general blood pressure of the body. The blood pressure markedly falls if the portal flood gates are thrown open by section of the splanchnics and on the other hand rises if these be stimulated. These nerves may be paralyzed by other means than section—nitrite of amyl, chloroform, and curarè, all acting in this way. Now, given such a paralysis, note the effect of gravity. Here is a chart showing the blood pressure in the carotid. The cord was divided in the upper

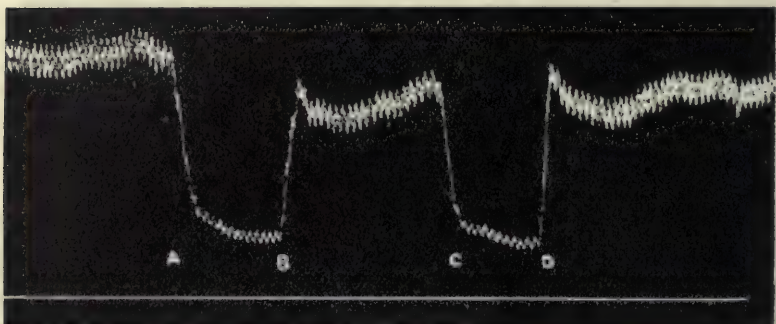


TRACING III.

dorsal region with the animal in the feet down position, and at once the pressure fell to zero and the heart became weak, and the respirations gasping. The abdomen was maintained in a retracted state. Evidently the blood was accumulating in the abdominal veins, and the animal, by retracting the abdominal muscles and gasping, was unconsciously doing its best to empty the paralyzed and engorged abdominal vessels and so get some blood into the heart. When the animal was reversed, and the feet put upwards, the blood pressure rose at once, gravity then coming to its assistance instead of being an impediment. The same effect was produced by bandaging, or pressing the abdomen, thus driving the blood out of the abdominal vessels.

As regards the effect of abdominal pressure, it is interesting to note that Stephen Hale, in his classical experiments on blood pressure, recorded that "when the blood has subsided in the tubes which were fixed to the arteries of these dogs, it would, as in the horses, rise, on a sudden, considerably on deep sighing, as also on pressing the dogs' bellies hard with the hand. The blood would

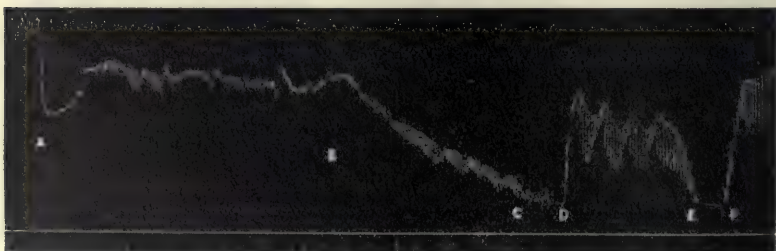
rise immediately about six inches and subside as much on removing the hand."



TRACING IV. (OF BLOOD PRESSURE IN CAROTID.)

Splanchnics weakened with a mixture of chloroform and ether in equal parts. A, feet down. B, broad bandage drawn round abdomen. C, bandage removed. D, horizontal.

Again, if the abdomen be *first* of all rightly bandaged, then it is found that putting the animal in the vertical, feet-down position produces almost no fall of blood pressure in the carotid, even if the splanchnic nerves be cut or paralyzed by chloroform or curarè. To quote Leonard Hill's words: "a dog was placed in the horizontal position . . . the abdomen firmly bandaged, and the spinal cord divided in the upper dorsal region. On placing the animal feet downwards, the blood pressure in the carotid fell only a few millimetres. After a few minutes I removed the strapping from the abdomen, the pressure immediately fell to zero, and the animal died. If the wall of the abdomen be very freely divided by a crucial incision when the animal is in the feet-down position, the blood pressure will fall, largely in consequence of the withdrawal of mechanical support from the splanchnic vessels."



TRACING V.

Shows the effect of chloroform in lowering the blood pressure and also the effects of position and abdominal pressure on the same. A, feet down. B, chloroform pushed. C, chloroform removed (note that low pressure continues). D, abdomen compressed. E, compression removed. F, feet up.

It is seen that compression of the abdomen and putting the animal in the feet-up position have just about the same effect on the carotid blood pressure.

This tracing confirms what MacWilliam stated in the *British Medical Journal* of 1890, Vol. II. He wrote as follows: "The fall of blood pressure caused by chloroform is due primarily to a depressing influence of the drug on the vaso-motor centre. Later on the heart is weakened. When a great fall of blood pressure has been produced by the inhalation of chloroform, inversion of the animal exerts a slight effect in raising it. But by far the most powerful means of influencing the carotid pressure under chloroform is by applying continual firm pressure over the intact abdomen."

So much for the effect of gravity in lower animals, which normally assume the horizontal position. To summarize, it is found that in them :

(1) Gravity *acts* on the circulation, producing, in the vertical feet-down position, a lowering of the carotid blood pressure and a rise in the portal and lower part of the systemic systems.

(2) If the great vaso-motor nerves, *i.e.*, the splanchnics, be cut or paralyzed by drugs, the effects of gravity are very much more marked, thus showing that this force chiefly acts on the portal circulation.

(3) Any artificial support, such as bandaging, neutralizes the effect of gravity on the contents of such paralyzed vessels.

(4) Version to the head-down position acts in the same way, emptying the engorged abdominal circulation.

Turning next to the effect of gravity on normally upright animals, in monkeys it is found that inversion of the body does not alter the general blood pressure, and probably in normal man the same state of things exists. Dr. Oliver, of London, by an ingenious instrument called the arterio-meter, has investigated the effects of different positions on the diameter of the radial pulse in man, and finds that in health the pressure here is actually greater when he is vertical than when recumbent. In other words, the human vaso-motor centre compensates fully, or even over-compensates, for the force of gravity—this being effected by a quickened heart-beat and probably an increased constriction of the abdominal blood-vessels. If, however, the person be weakly, then gravity acts and the blood-pressure becomes less in the radial artery in the vertical than in the horizontal posture.

In animals, as we have seen, the vertical head-down position has very little effect upon the blood pressure, raising it, however, a little

in the carotid artery. In man the compensation for this position is not so complete, and it produces an engorgement of the vessels of the head and neck in a way which standing does not do in the feet. The power of compensation for the head-down position seems capable of cultivation, however, as seen in people whose occupations necessitate their stooping much. Natives of India stoop for many hours a day planting out rice in the flooded fields, and this in the hot sun, without any evil effects, and Gerdy mentions that vine-dressers become able to work all day in a bending position with the head down.

Thus normally gravity gives man little or no trouble when standing, sitting or lying down, his vaso-motor centres being fully able to neutralize its effects.

Very different, however, is the state of things when the circulation becomes weakened from any cause. Here we find that gravity is a most potent factor in the production of the signs and symptoms of various diseases. Especially important is it in diseases of the circulation. Diseases of the heart may, for our present purpose, be roughly divided into (1) those interfering with the flow of blood towards and into the left ventricle; and (2) those which hinder or weaken the free flow of blood *out* of the left ventricle. In the former class, engorgement of the venous system, with cyanosis and dropsy as signs, predominate, while in the latter insufficient filling of the arteries with blood, with cardiac dyspnoea and tendency to syncope as symptoms, is the chief result. In both these classes gravity finds a fair field for action, and hence come in the venous type of cases; for example, in an advanced case of mitral stenosis, the dropsy and swelling of the feet after standing, and in the arterial type of cases, for example, in aortic regurgitation, the tendency to fainting and dizziness in the vertical position. It is evident also how by placing the patient in a horizontal position in bed we remove an impediment to the lagging venous flow in the one case, and in the other make it easier for the weakened or hampered left ventricle to do its work. Again, the action of gravity explains, at least in part, why in a case of weak and dilated heart, *e.g.*, in far advanced exophthalmic goitre, sudden sitting up in bed may cause the already yielding heart to stop in diastole. It had all it could do to work when the patient was horizontal, and when called upon to act in addition against a column of blood extending from the heart to the head, it gives in, and he dies suddenly. Inertia also comes into play here, the blood tending to lag behind when the body is suddenly moved in any direction. Dr. Lauder Brunton, in his recent work

on "The Action of Medicines," mentions how "Before the introduction of chloroform, a curious plan was employed in Paris for causing temporary anæsthesia. They laid the man who was to be operated upon flat upon the ground. At either side of him they had three strong men, who at a given signal raised him quickly from the recumbent to the standing position. The head was raised quicker than the blood could follow it, and this temporary anæmia of the brain brought about a faint, during the continuance of which the operation was performed." In emaciating diseases, such as carcinoma, when death is near and the strength of the circulation is small, hypostatic congestion of the superficies and different organs of the body may set in, due to gravitation of the blood to the most dependent parts. In more acute conditions, such as shock and syncope, there is a tendency to paralysis or weakening of the splanchnic nerves, and as a result the patient "bleeds into his abdominal veins," as it has been graphically described. This is, as is well known, much more apt to occur when the body is vertical, gravity then helping the blood to thus accumulate.

Examples of the action of this force in aggravating different diseased conditions might be enumerated almost indefinitely, but I will only mention two more. First, the distension of the spermatic veins in varicocele when the body is vertical, as contrasted to their comparative emptiness when it is horizontal, and, second, the congested and cyanosed condition of many ulcers of the leg when the patient is standing, this sign largely disappearing when he lies down or raises the limb.

The lessons to be learned from a study of the action of gravity on the circulation seem to be that, while in health, we may ignore its existence, in disease its consideration is of importance, and we may do good (1) by neutralizing its effects, (2) or occasionally by actually making use of the force.

Whenever there is a weak state of the circulation from any cause, then it will help the patient much to keep him horizontal, and the good effects of this are well seen in cases of commencing failure of compensation. But even long before this break-up occurs, the more the patient can rest in this position the less his overworked heart has to do, and hence the longer compensation will be likely to be fully maintained. This is, I think, a very important point, and worth emphasizing. If the heart beats, say ten times less a minute when the patient is lying as compared to standing, then it is saved a certain amount of work, and hence will not so soon give out.

And in those who *must* go about, some mechanical support to the dilating veins of the lower limbs and abdomen should help to prevent the blood from lagging here—elastic webbing, stockings, and belts of various sorts no doubt act in this way, and this may explain to a large extent the popularity of so-called galvanic and other patent belts—their giving a support to the abdominal veins. And may we not here find also a reason for “the girding up of the loins,” practised by the ancients before entering upon any very fatiguing exercise, such as running great distances?

We saw how the splanchnic nerves, or their centres, were easily paralyzed in animals by various drugs, such as chloroform, and how then gravity produced a rapid fall in the arterial blood pressure in the carotids when the feet-down vertical position was assumed.

Without entering upon the much-debated ground of the effects of chloroform on the body, it seems that here we have a most urgent reason why this anæsthetic should only be given with the patient horizontal. I would further venture to suggest that a firm bandage previously applied round the abdomen, might be a safeguard, especially in women, where the respiration is chiefly thoracic, and hence would not be much interfered with by such treatment.

Hill suggests that the reason why chloroform is taken with such immunity by pregnant women is that the intra-abdominal pressure produced by the enlarged uterus prevents accumulation of blood in the abdominal veins. While not going quite so far as this, I think that there is probably some truth in the explanation, but the physiological hypertrophy of the heart in this condition must not be ignored.

Lastly, we may not only neutralize the effects of gravity by placing the patient more or less horizontal and by judicious support, but may, on the other hand, occasionally make use of this force by raising above the level of the heart a part of the body in which the blood has accumulated to an abnormal extent. A good example of this is the beneficial result obtained by placing a limb, affected with varicose veins, on a level above that of the body.

Also in cases of too high blood pressure, placing the patient in the vertical position, *e.g.*, making him sit up in bed ought to assist the compensation for the excessive tension, especially if all constrictions round the abdomen be removed, the splanchnic vessels then being given every chance of dilating freely. This position, too, with an unhampered condition of the abdominal walls should assist the action of nitrite of amyl and nitro-glycerin, or the slower and more persistent effects tetranitrated of erythrol.

It is impossible in a paper like this to do more than enumerate a few examples of the wide-spread effects of gravity in diseased states of the human body, and this I have in a very feeble way attempted to do.

Selected Articles.

THE MEDICAL TREATMENT OF TOOTHACHE.

BY FREDERIC C. COLEY, M.D.,

Physician to the Children's Hospital, Newcastle-upon-Tyne, and to the Northern Counties
Hospital for Diseases of the Chest.

BEYOND all question the treatment of toothache is mainly surgical. An aching tooth is usually carious and should be "stopped," if that can be done with a fair prospect of success. Carious teeth which cannot be "stopped" had better be extracted as a general rule. But I need not waste time in enumerating the circumstances which often arise to make these simple rules inapplicable; and no one who has recently suffered from a "jumping" toothache will be inclined to think that I need apologize for asking a little space in which to enumerate the remedies which I have found successful in such a common and painful ailment.

I may say at once that I believe that very few toothaches are incapable of permanent relief without extraction of the tooth. That operation is very often the most desirable way of procuring relief, but it is very rarely the only way. Thousands of people have carious teeth without toothache, which proves that caries is only one factor in the production of pain. The other factor may (and commonly does) prove to be removable, and then the pain ceases, though the carious tooth remains. And, on the other hand, it is only too common to find that neuralgic pain persists after the extraction of tooth after tooth, which might perhaps have done good service *in situ*.

A toothache which is "scotched" by appropriate means often ceases permanently; or it may return once or twice (being again relieved by the same, or some other, remedy) and then finally disappear.

To attack a pain of this kind by a mere narcotic, such as opium or morphia, seems to me rather clumsy therapeutics, and we can

usually find much more suitable methods. Alcohol in any form is still more objectionable. One of the most melancholy cases of alcoholism that ever came under my own observation had its origin in the inconsiderate recommendation of stout as a remedy for dental neuralgia. It is partly because I desire to replace these dangerous narcotics by more effectual and safer remedies that I have determined to write the present paper.

The pain of a hollow tooth may generally be entirely removed by inserting in it a pledget of cotton-wool soaked in carbolic acid liquefied by the addition of an equal quantity of water. A pledget of dry wool should be placed over the carbolized wool, to retain the acid. The aching usually ceases in a few minutes, but may recur after a few hours, to be again relieved on a reapplication of the carbolic acid. A very few repetitions commonly suffice to make the cure permanent. But of course the hollow tooth should be stopped, if possible, afterward.

A gentleman came to me one day in terrible agony from a raging neuralgia located in the part of his lower jaw from which he had lately had several teeth removed. I applied to the gum rather less than half a grain of cocaine in powder. In a minute or so he exclaimed, "It is gone!" and the changed expression of his countenance showed how complete was his relief. Better still, the neuralgia never returned, though he had previously suffered from it at intervals for a considerable time. Probably the permanence of the cure was attributable to a quinine mixture which I also prescribed.

It would, however, be very unwise to give the patient a prescription for cocaine or a quantity of the drug to be reapplied p.r.n. Such a course would involve no little danger of setting up a habit leading to cocaineism.

Persons who have been for some time deprived of a proper allowance of sleep, from any cause, are very liable to be painfully reminded of the existence of any bad teeth which they may happen to possess by an attack of dental neuralgia. If this is not soon relieved by appropriate means, it tends to aggravate and perpetuate itself by still further depriving the patient of sleep. I have found the following prescription very useful in such cases:

R Quin. Sulph.....	gr. ii.
Acid. Hydrobrom.....	m. xv.
Tr. Gelsem.....	m. xv.
Syrup.....	℥iss.
Aq. ad.....	℥j. t.d.

I have seen a raging toothache completely relieved in a few minutes by a single dose of two grains of exalgin. It is best given in solution. Half a drachm of rectified spirit will dissolve as much as gr. xx of exalgin, and this does precipitate on dilution with water. Exalgin is, however, a somewhat uncertain remedy. Sometimes it is a brilliant success, and sometimes it is an utter failure.

There is a kind of toothache which comes on a while after taking food, when the contents of the stomach are naturally acid. This is often relieved with quite astonishing rapidity by the administration of an alkali. The best way is to give a Seidlitz powder, minus about a quarter of the acid, so leaving an excess of alkali. In a typical case of this kind the pain ceases instantaneously—almost as soon as the effervescing draught is swallowed.

But of all medical remedies for toothache I know of none which is so successful as salicylate of sodium. I believe it is especially useful in those cases where the pain is started "by taking cold." Even in the condition which is called by dentists "periostitis," where the carious tooth becomes slightly loosened and projects beyond its neighbors, and is exquisitely tender when eating is attempted, I have often known sodium salicylate to be completely and permanently successful. A dose of gr. xv. will usually relieve the pain very promptly, and if this is repeated every four hours the inflammation may entirely subside, leaving, of course, a carious tooth to be disposed of according to circumstances. The addition of belladonna is often advantageous. Fifteen grains of sodium salicylate, with fifteen minims of tincture of belladonna, will often procure refreshing sleep instead of a night of agony.

I believe that this use of salicylate of sodium is not generally known. I first became aware of it by experience in my own person; and since then I have used it with many brilliant successes and few failures in a very large number of patients. I have, once, however, known phenacetin to succeed where the salicylate failed. But the salicylate is much more worthy of confidence as a rule. It is especially valuable in children, where extraction of teeth is to be avoided, if possible, lest the development of the maxilla should be injured.—*The Practitioner*.

Progress of Medicine.

OBSTETRICS

IN CHARGE OF

ADAM H. WRIGHT, B.A., M.D. Tor.,

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AND

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ASSISTED BY

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Physician to Victoria Hospital for Sick Children.

WALCHER'S POSITION IN LABOR.

I have had a case recently in which I used with great advantage Walcher's position in parturition, the use of which was advocated at the Carlisle meeting last August, and in the *British Medical Journal* of October 31, 1896. The details were as follows:

Mrs. P. had menstruated regularly and without pain since the age of 15, and had been married two years. At her first confinement on December 28, 1895, she was delivered with forceps, after great difficulty, of a child, which was dead when born.

On January 11, 1897, she was at full term. Pains began in the night and the waters broke at noon the following day. During the afternoon and evening of January 12 she had severe pains. Early the next morning the midwife, who was in charge, sent for me, and I thus first saw the patient at 6 a.m. on January 13. I found dilatation complete, the head presenting in the L.O.A. position but arrested above the brim of the pelvis. I at once gave chloroform and applied Professor A. R. Simpson's axis traction forceps in the left lateral position, and made three separate and prolonged attempts to pull the head past the brim, using much more force than I ordinarily find necessary for that purpose.

I then decided to try Walcher's position. Having put the patient in the lithotomy posture, with the buttocks well over the edge

of the bed, I allowed the legs to hang down. The feet then rested on the floor. I therefore raised the pelvis by placing two pillows under the buttocks, and then found that the feet swung clear of the floor, so that the whole weight of the legs pulled the pelvis down and away from the sacrum. I then applied traction, and, though I was using less force than before, the head began to enter the pelvis, and passed the brim almost suddenly. Delivery was completed deliberately, and without further difficulty. After artificial respiration, the child breathed freely, and has developed no head symptoms, though the right frontal bone was bulged to an extent that suggested fracture.

The following measurements indicate the degree of disproportion between the head and the brim: The circumferences of the child's head were—occipito-mental, $15\frac{1}{2}$ inches; occipito-frontal, $14\frac{1}{4}$ inches; sub-occipito-bregmatic, $13\frac{1}{2}$ inches. The diameters of the pelvis were—interspinous, 10 inches; intercrystal, 11 inches; external conjugate, $7\frac{1}{4}$ inches; diagonal conjugate, $4\frac{1}{4}$ inches; estimated true conjugate, $3\frac{3}{4}$ inches. The pelvis was generally contracted with a somewhat projecting promontory. In this case the advantages of Walcher's position were very great, as but for it I am sure the life of the child could not have been saved without symphysiotomy, which, like craniotomy, would have exposed the mother to grave risk, exhausted as she was, by prolonged labor.—G. H. MITCHELL, M. B. in *British Medical Journal*.

SALINE INJECTIONS AFTER FLOODING.

Amillet (*L'Obstétrique*, July 15th, 1897) insists that after grave hæmorrhage in pregnancy or labor a saline intravenous injection is the best method for encountering acute anæmia. A 1 per cent. solution of chloride of sodium is the only available mixture which has no evil influence on the corpuscles. At least 1,500 to 2,000 grammes must be injected. In less serious cases 200 grammes can be injected under the skin; more than one dose may be required. Amillet recommends an intravenous saline injection or a subcutaneous injection before any obstetrical operation is performed on a woman exhausted by loss of blood. When the patient has clearly been revived by these means she must, in any case, be closely watched, as sometimes the good effects do not last. The injections must be repeated, if necessary, till all danger has passed away.—*British Medical Journal*, Sept. 4th, 1897.

ANÆSTHESIA IN NORMAL LABOR.

At the sixth congress of Russian physicians, Dr. Bakoemsky related his experience with fifty-three women, with normal labor, to whom he administered anæsthetics. To forty-five he gave ether, and to eight chloroform. The investigations carried on partly by the aid of the tokodynamometer, and partly by other instruments of precision, showed that during the administration of ether the pulse and the respiration remained almost the same, and the contractile force of the uterus was increased; the duration of labor was shorter; in no instance was there albumin in the urine; the involution of the uterus seemed to progress more rapidly; in the new-born, icterus was more rare; they lost less weight during the first week. The experience with chloroform was not quite so favorable, as it somewhat slows the progress of labor. In conclusion, the author says that in ether we possess an ideal remedy to abolish the suffering in labor, and we should employ it much more frequently than we do. He is surprised that this view is making such slow headway among physicians.—*American Medico-Surgical Bulletin*.

PREMONITORY SYMPTOMS OF PUERPERAL INFECTION.

Ferré (*L'Obstétrique*, September 15, 1897,) lays stress on the success of intra-uterine treatment for puerperal fever. This success stands in direct ratio to the earliness of intervention. Hence very careful clinical researches have been made in lying-in hospitals in order to detect true prodromata. The true rigor, local pains, and conspicuous pulse and temperature are known to all, and when combined indicate more or less advanced infection. Ferré denies that these symptoms ever come on suddenly, though certain milder types of infection now observed may represent sepsis modified by antiseptic agents. These milder types, however, will assuredly develop into deadly septic infection if neglected. Ferré finds, after long clinical research, that even the severest form is preceded for a day or two by distinct elevation of temperature and pulse, and by insomnia. An evening temperature of about 100° in the axilla, with a fall of about a degree in the morning, without a corresponding drop in a somewhat rapid pulse, is a distinctly suspicious symptom. The rise in the pulse often precedes the rise in the temperature; the observer must, therefore, make sure that acceleration of the heart's action is accounted for even in a patient who seems otherwise convalescent. Reaction after the fatigue of labor, hæmorrhage and emotions all send up the pulse. Insomnia, Ferré has noted, is

often observed in the earlier stages of infection, distinct want of sleep without restlessness is usual for a day or two before bad septic symptoms. The lochia may remain free from odor in the premonitory stage of puerperal septicæmia, nor are the discharges always foetid when the disease is established.—*British Medical Journal*, October 9, 1897.

THE PRODUCTION OF MILK.

Budin (*Sem. Méd.*, May 21, 1897,) reports on an investigation made by him as to the amount of milk furnished hour by hour by the fourteen wet nurses in his maternity department. The nurses had their own and fifty additional children to suckle. By a kind of systematic training the milk production was gradually increased. On October 1, 1896, the average daily production of each nurse was 1,657 g. It was raised successively to 1,868, 1,953, and on November 29 to 2,270 g. Analysis showed that the quality remained uniformly good, and the condition of the infants confirmed this. The conclusion is that within given limits the supply of milk varies with the demand. To obtain a large quantity of milk the nurses must suckle the infants freely. It is found that if a woman has barely enough milk for one child the supply is much increased by giving her one or two infants to suckle.—*British Medical Journal*, June 26, 1897.

[We would commend this to the serious consideration of some of the charitable institutions in Ontario.]

THE TREATMENT OF PLACENTA PRÆVIA.

G. Fieux (*Annales de Gynéc.*, August, 1897, *British Medical Journal*, October 2, 1897) reports five cases of placenta prævia which have come under his notice. In the first two the treatment consisted in the use of the Champetier de Ribes bag and rupture of the membranes; in the next two, packing the vagina very tightly was first tried, and found ineffectual, while rupture of the membranes immediately arrested the hæmorrhage. In the fifth case hæmorrhage occurred at the sixth month of pregnancy, natural rupture of the membranes then occurred, and the gestation nevertheless persisted for seventy days thereafter, a viable child being ultimately born without incident. Fieux, therefore, sums up strongly in favor of rupture of the membranes as the best treatment of placenta prævia. Even when the placenta covers the os uteri, he would still rupture the amniotic sac through the placenta; in fact, this was

done in the third case although the leg of the foetus was also drawn down into the opening. The rupture need not be immediately followed by complete emptying of the uterus, as is learnt from the fifth case.

CONSTIPATION IN THE PUERPERIUM.

Hubert (*Revue Médicale*, Louvain, June 30, 1897) writes on alarming symptoms in childbed, which depend entirely on constipation and disappear when the bowels are opened. No doubt the bowels are naturally slow to act after delivery. Sometimes the retention of faecal matter simulates metro-peritonitis. Not only is there loss of appetite with foul tongue and breath, but tympanitic distension of the abdomen sets in with rigors, and temperature occasionally as high as 104° . When a purge succeeds all these symptoms vanish. If the constipation be neglected true peritonitis may undoubtedly set in. This complication is not the peritonitis of puerperal infection due to the streptococcus, but a peritonitis of stercoral infection where the offending germ is the bacillus coli, which, passing through the intestine, infects the serous coat. There is also a later form of constipation in the puerperium, accompanied with hæmorrhages, hæmorrhoids, and great pelvic congestion.—*Epitome. British Medical Journal.*

THE ABUSE OF TOPICAL APPLICATIONS TO THE ENDOMETRIUM.

Samuel L. Webber, Chicago, believes that severe tubal infection frequently follows applications to the endometrium, and that a very large percentage of these cases are the result of the pre-existing gonorrhœal endometritis following the commonly used medicaments, and the harm that is done is that valuable time is wasted, and that the woman continues to suffer. The use of the curette is a rapid method of terminating the trouble. Curetting removes most of the thickness of the endometrium, leaving only a thin layer behind. Following this, antiseptic applications may be made with the expectation of penetrating the thin layer of the endometrium left, and thus reaching and destroying all the bacteria. Frequent curettement in rapid succession is occasionally necessary. Strong antiseptic applications of such substances as remain on or in the affected tissue for some time are desirable—hence the value of iodine and iodoform. He considers the antiseptic applied and not the curettement the essential factor in the treatment.—*American Gynecological and Obstetrical Journal.*

PÆDIATRICS

IN CHARGE OF

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AND

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THE BECHTEREW TREATMENT OF EPILEPSY.

Eight cases of epilepsy treated for a period of six weeks with a mixture of bromide of potassium, codein, and adonis vernalis, are reported by De Cesare (*Rif Med.*, August 13, 1897). The medicine is given twice daily. In four cases there was complete suspension of the fits; in three other cases the fits were replaced by infrequent attacks of vertigo, and in the last case there were four attacks of vertigo and two convulsions. In each case the attacks were very much reduced in frequency; no bad results were observed. The digestion was not impaired, the pulse was fuller, the temperature normal, diuresis increased, sleep uninterrupted and calm, and the mental condition unchanged. The author believes the results were due to the combination of drugs, and not to the bromide alone.

THE BACILLUS OF FRIEDLÆNDER IN PHARYNGITIS AND TONSILLITIS.

In the *British Medical Journal* for March 20, 1897, W. C. Pakes, Assistant Demonstrator of Bacteriology at Guy's Hospital, directs attention to the investigations of Nicolle and Hébert to determine the bacterial forms present in the throats of patients suffering from tonsillitis, follicular tonsillitis, or membranous pharyngitis. In an investigation of 1,600 serum tubes these observers found the pneumobacillus of Friedlænder eight times, six times alone. The author, following these investigations, has examined 500 serum tubes from the throats of patients from the wards and out-patients at Guy's. In five cases he found the bacillus of Friedlænder; twice it was found on the surface of the serum in pure cul-

ture, twice in association with the Klebs-Löffler bacillus, and once with the staphylococcus aureus.

PICRIC ACID IN ECZEMA.

In the *Sem. Med.*, May 26, 1897, Gaucher reports good results in the treatment of acute eczema from applications of a solution of picric acid. The acid is applied in one per cent. solution, and the part covered with cotton-wool soaked in the same fluid. The dressing is changed every second day. The acute inflammation subsides rapidly under this treatment, and itching is quickly relieved. The author considers that this mode of treatment is applicable in other acute skin diseases, such as pemphigus.

THE BACTERIOLOGY OF THE SIMPLE BASIC MENINGITIS IN YOUNG INFANTS.

The proceedings of the Pathological Society, of London, published in *The British Medical Journal*, Oct. 23, 1897, contain a report by Dr. G. T. Still of investigations carried on to determine the nature of the attacks of simple basic meningitis in young infants. The morbid anatomy was distinct from suppurative forms of meningeal inflammation. It was a specific inflammatory lesion due to a specific microbe, prevalent in England and America, and commonest during the spring. The cases observed by the author were sporadic, and seven in number. They were all more or less alike, the chief symptoms being convulsions, retraction of the head, rigidity, opisthotonos and hydrocephalus. The anatomical lesion found after death was thickening of the arachnoid about the base of the brain and spinal cord; in recent cases there was a softer exudation—lymph rather than pus; in later stages fibrous thickening alone was to be observed. The microbe might be absent in certain stages from the membranes, and would then be discoverable in the fluid of the ventricles. It was a diplococcus, with flattened or concave faces of apposition, smaller than the pneumococcus; no lanceolate forms were encountered, as in the latter; it closely resembled, however, the gonococcus. It did not stain by Gram's method, was devoid of capsule, and occurred free in the exudation or cerebro-spinal fluid, or in the cells; it could be stained with a saturated solution of aniline blue. No growth took place at the room temperature. Cultures might readily be made on agar, glycerine agar, blood agar, or in broth or milk. Milk was not coagulated; in this behaviour it differed from the pneumococcus. The author

thought that the microbe was identical with the diplococcus intracellularis of Weichselbaum, although it was more hardy in its growth. Nevertheless, the last named coccus varied much in this respect; it might live as long as fourteen days. It was seldom present in large numbers, hence fluid should be withdrawn from the ventricles of the brain by means of a sterilized pipette; or a piece of the meningeal exudation, as large as a pea, should be removed on the loop inserted through a hole in the dura mater. The author had not found it in the blood. There was no affection of the viscera accompanying the meningitis, but a periarthrititis was at times observed, and possibly the exudation found about the joint arose from a metastasis of the microbe to these situations. Experimental inoculations made beneath the skin or into the peritoneal cavity of mice, rabbits and guinea pigs gave negative results, or at most produced only a transient general illness. The author, in conclusion, expressed his opinion that such slight differences as existed between the microbe and the diplococcus intracellularis were probably naturally acquired ones, and that the disease in question was etiologically allied to epidemic cerebro-spinal meningitis.

TONSILLITIS WITH PERICARDITIS WITHOUT ARTHRITIS OR OTHER RHEUMATIC SIGN.

The following interesting case is reported (*British Med. Jour.*, Oct. 23, 1897), by W. Campbell MacDonald, of London:

P. S., aged six and one-quarter years. March 18, 1897: She is a pale, nervous child, but not anæmic; complains of being tired and cold. Temperature 100.6°, axilla, 5 p.m.; pulse rapid (nervous), tonsils enlarged, pharynx hyperæmic, as also is the uvula, which is also elongated. No secretion seen at mouths of tonsillar crypts, and none on palate. There is no complaint of pain, no cough, no rash. She was put to bed and given sodii salicyl. gr. iij every four hours. Next morning the throat was a little better; temperature normal. At the base of the left lung there are heard a few *rales*, but no pleuritic friction. There is no pericardial friction detectable; no increase in cardiac dulness.

March 21. Throat better; uvula retracts now. Pericardial friction heard over a large area. Pulse 132; no pleurisy; no pain in joints on rough manipulation. This sudden supervention of pericardial friction heard over an area which excludes endocarditis as the cause of the *bruit*, associated with tonsillitis of a very moderate degree, should lead to the heart being examined as a routine duty,

so that the early detection of pericarditis may give the patient the best chance.

June 30. The area of friction sound had diminished but a little from its size of March 21. The child has now no palpitation on exercise, and feels well.

EMPHYEMA OF THE ANTRUM IN A CHILD AGED EIGHT WEEKS.

An interesting case of abscess of the antrum in a child aged eight weeks is reported by D'Arcy Power, in the *British Medical Journal*. The child was brought to the hospital on account of an abscess which had opened, and was discharging at the lower part of the right lower eyelid. The right side of the face was swollen, and the skin hot and red. Pus could be squeezed out, and on looking into the mouth, pus could be seen exuding from the alveolar border of the upper jaw. A probe passed along the sinus showed that the upper part of the superior maxilla was bare. An opening was made through the floor of the antrum, and a drainage tube passed from the eyelid into the mouth. About a drachm of thick pus came away. The child died ten days after the operation. The history was that forceps had been used at its birth, and that both sides of the face had been badly bruised, the right more than the left. When the infant was a month old, he refused the bottle and had difficulty in closing his mouth. About the same time, redness and swelling appeared, and eventually an abscess formed, and was opened by the medical man in attendance.

Cases of antral empyema in the young are extremely rare. The writer could only find one other case reported in detail.

SCARLET FEVER TREATED BY ANTI-STREPTOCOCCIC SERUM.

Reported in the *Lancet* (1897, No. 3827) by A. K. Gordon. The patient was a boy aged six years. Cultures from the throat showed streptococci and staphylococci, but no bacilli. Ten c.c. serum from the Pasteur institute was given at 5 p.m., up to which time the child had been steadily growing worse. Some improvement noticed on the following day, and at noon 10 c.c. serum again given. On the day following, temperature had fallen to 99.5; pulse 96; throat lost offensive odor and fauces were clean; rash fading.

This case has seemed to the author to be worth publishing on account of the rapidity with which the improvement followed the administration of the serum. On admission the child seemed

moribund, but he rallied from the effects of the journey in the ambulance and commenced to improve a little till the seventh day of the disease ; then he grew rapidly worse and was to all appearances dying from septicæmia. He was semi-comatose, with a failing heart, dusky rash, and diarrhœa. After one dose he rallied, and after the second a rapid improvement took place and was maintained, his convalescence occurring very much sooner than is usually the case with patients who have had any septic symptoms.

CONGENITAL TEETH.

Details of three cases and references to 70 more are given in the *Edinburgh Med. Journal* by J. W. Ballantyne. From a study of these cases he arrives at the following conclusions : (1) Congenital teeth form a rare anomaly, but one which has long been known both to the profession and to the public. (2) Their presence has often an ill effect upon lactation, partly on account of the imperfect closure of the infant's mouth, and partly by the wounding of the mother's nipple ; sublingual ulceration may also be a result, and infantile diarrhœa and atrophy are more distant consequences. Sometimes, however, symptoms are altogether absent. (3) Congenital teeth have probably little or no prognostic significance as regards the bodily or mental vigor of the infant carrying them. (4) The teeth usually met with are lower incisors, but sometimes upper incisors may be seen, and very rarely molars of either the upper or lower jaw. Other facial or buccal malformations may occasionally be met with. (5) They are caused by the premature occurrence of the processes which normally lead to the cutting of the milk teeth ; in a few cases it would seem that the anomaly is due to a true ectopia of the dental follicle and its contained tooth. (6) In a few instances a hereditary history has been established. (7) As the congenital teeth are usually incomplete and ill developed, and more likely to be more an inconvenience than an advantage to the infant, they are best removed soon after birth, an operation which can be easily and, except in very rare instances, safely performed. (8) The occurrence of premature teeth in certain historical personages is an interesting fact, the importance of which has been much exaggerated.

TREATMENT OF CARIES OF THE SPINE.

The author, A. H. Pubby, London (*Pædiatrics*, August 15, 1897), first deals with general treatment, the importance of which he emphasizes.

Treatment directed to the spine. The principles are three in number :

- (a) To fix the vertebral column.
- (b) To remove the weight of the upper part of the body.
- (c) To prevent unnecessary deformity.

To carry out these principles two methods are at our disposal, viz., recumbency and the use of appliances.

Recumbency has for its chief indication—relief of pain in acute cases, and, when the palm pressure test is applied to the back, it is found to be yielding anteriorly.

The advantages and disadvantages are then dealt with, and the proper duration of recumbency. Under the heading of "Points to be observed in placing a patient in the recumbent position" he deals with—the material of which the mattress is made, air beds or water beds, retentive apparatus, the use of extension, the use of a couch or bed or a carriage, and the choice of position prone, or supine, the former to be chosen when bedsores are present.

Suspension of the head is absolutely essential in cervical disease. It can be arranged by carrying the plaster bandages of a Sayres jacket around the neck and forehead, leaving the face and vertex exposed, or a juremast may be used.

Suspension should be employed when the disease is above the fourth dorsal vertebra. This is very important.

Then follows a comparison of the advantages and disadvantages of plaster and poro-plastic jackets respectively—generally speaking, the plaster has the advantage of cheapness and greater ease of application. But for a skilled hand the poro-plastic is the more desirable.

The paper is concluded by asking the very important question: "When may treatment be dispensed with in spinal caries?" He answers it under the following heads :

1. The absence of pain is no test—if pain returns on removal of the support the disease is not cured.
2. When the spine is firmly fixed and the deformity has remained stationary for several months.
3. If a recession of the deformity has been gained and maintained for several months.
4. If a compensatory lordosis, just below the kyphosis, is established.
5. Dorsal caries is very seldom cured in one year ; cervical and lumbar may require less.
6. If the improvement in general health is maintained.

7. Supports must always be worn longer in tubercular cases. If the support is worn too long, the muscles atrophy rapidly. In any case, begin to dispense with the support gradually, especially if the patient is increasing in weight.

DIAGNOSIS OF TRAUMATIC SEPARATION OF THE EPIPHYSES.

This subject is discussed under six headings by Jno. Poland, F.R.C.S. Eng. (*Pædiatrics*, July 15, 1897.)

1. *Age of patient.* These injuries only occur in patients under twenty-one or twenty-three years of age. Each epiphysis is usually limited to a certain age. In the London museums of fourteen specimens of fracture of the lower epiphysis of the femur, eleven cases were between fourteen and eighteen years of age. The age for the lower end of the radius was from twelve to sixteen years. If injury to an epiphysis occurs at an earlier or later date than the time mentioned, we are apt to have a very complicated condition, owing to the anatomical development of the parts.

2. *Mobility of an epiphysis.* Next to age this is the most important sign. If mobility is found at an epiphysis in a patient under twenty-one years, we may be tolerably sure of our case.

3. *Displacement at an epiphysial line of junction.* Each epiphysial line may be known and its distance from the joint. (The epiphysis of the humerus includes the tuberosities; that of the lower end of the femur all the portion below the adductor tubercle; that of the lower end of the humerus only includes the external epicondyles with the trochlear and capitellar processes). Displacement may be sufficient to compress important vessels and nerves and thereby cause serious trouble. With displacement separation of the periosteum from the shaft occurs, and if the case is not seen for several days, exudation under the periosteum occurs, and instead of sharp, well-defined edges being felt at the seat of trouble, the angles and depressions are filled up and a comparatively smooth surface felt. Again, if epiphysial separation with displacement be not recognized, a good deal of trouble may ensue. If the limb is not kept quiet long enough to allow firm union to occur, bending will follow. Instances of this are given.

4. *Modified crepitus.* It must not be looked for, but may be felt during the examination. It may be merely a movement or a more distinct crepitus.

5. *Character of displaced diaphysis or epiphysis.* There is no such injury in children as Colles's fracture. They are, in reality, separ-

ated epiphyses. Separation may be partial or complete, or associated with dislocation. Cases are given of each of these conditions.

6. *The joint is often uninjured.* Treatment is satisfactory if the fracture is properly reduced and if the limb is kept quiet for a sufficient length of time.

MALFORMATION OF HEART—TRANSPOSITION OF AORTA AND PULMONARY ARTERY.

H. D. Rolleston, London (*Pædiatrics*, August 1, 1897): the septum ventriculorum was patent near the top. The aorta arose from the right ventricle; the valves were healthy and the innominate, left carotid and subclavian crossed normally from the arch.

The pulmonary veins opened into the left auricle, and the pulmonary artery was given off from the left ventricle.

Remarks. It has been stated by Carpenter that transposition of the blood vessels is generally accompanied by transposition of the viscera. In this case it was not so. The foramen ovale and the ductus arteriosus were nearly closed, so that the only way arterial blood could pass from the left ventricle to the right was by the deficiency in the septum ventriculorum. Since the walls of the ventricles were of equal thickness, the blood pressure would be the same in each, and very little interchange would take place. The result of this malformation is simply this—that the pulmonary and systemic circulations are independent of each other, one circuit of blood is from the left ventricle to the lungs and back by the pulmonary veins and left auricle; the other is from the right ventricle to the aorta, and back to the right auricle by the venæ cavæ—a condition clearly incompatible with life. The discussion of the cause of the developmental error is interesting.

NEW METHODS OF RESUSCITATING STILL-BORN AND FEEBLE-BORN CHILDREN.

Dr. B. Brown, of Alexandria, Virginia, in a paper read at the section on diseases of children at the American Medical Association (*Pædiatrics*, August 1, 1897), divides his cases into dead-born, still-born, and feeble-birth. The point of distinction between dead-born and still-born is interesting. Definition of still-born—the general features present all the appearance of suspended animation. No arterial pulsation can be detected. All the functions of the body are in a state of temporary suspension. By treatment the distinction between this class and that of dead-born is made.

Treatment. The subcutaneous use of m.iv.or m.v. of whiskey with m. i. of tr. bellad. If there is no response, or a very feeble one, one or two drachms of warm water is injected with one or two drachms of water (hot), with m. i. of spirits ammon. arom. If these measures do not produce a reaction we may conclude that the infant is dead born and not still-born.

Dr. Geo. Ackers, of Washington, said that the external application of whiskey with hypodermic use of styrch. sulph. gr. $\frac{1}{200}$ had been used in that city a great deal since Dr. Pryer had reported some cases.

Dr. Larrabee, of Louisville, spoke favorably of strychnia. He had saved a child after tongue pulling and chest pressure failed by calling on the reflexes through the anal sphincter. In his opinion the best method was to bend the child back, like a book, for inspiration, and then bending it forward, like closing a book, for expiration.

A SIMPLE METHOD OF REMOVING FOREIGN BODIES FROM THE NASAL CAVITIES OF CHILDREN.

Close the child's mouth firmly, says G. Bisser, M.D., New York, in *Pædiatrics*, July 15, 1897.

Take one end of a rubber tube in your own mouth, place the other end in that side of the child's nostril opposite to the one in which the foreign body is. Blow suddenly and vigorously.

This may also be accomplished by using O'Dwyer's forcible respiration apparatus. The only contra-indication is where the foreign body is so firmly impacted that it cannot be displaced.

ON ETHER NARCOSIS IN CHILDREN.

Since the work in 1882 by Demme and Gerhardt on anæsthetics, the study of ether narcosis in children has appeared in German literature. The views preferring chloroform have been accepted. The author's experience with 200 cases of ether narcosis has convinced him that in the youngest child this anæsthetic did not produce the disadvantages with which it was charged. The irritation produced on the mucus membrane of the trachea and bronchi was light. Narcosis can be produced in from two to five minutes. The stage of excitation is no greater than in chloroform, and vomiting is not so frequent. Sudden arrest of respiration was never observed. Recovery from the anæsthetic is more rapid than from chloroform. Infants usually take the breast or the bottle within a

short time after waking, and do not vomit. Pneumonia and nephritis were never occasioned by the ether.—Stors, in *Munich Med. Wochenschr.* 1897.

DEFECTIVE EYESIGHT IN CHILDREN.

This subject is attracting much attention at the present time. The intellectual activity of a nation may be fairly gauged by its eyesight. The higher the brain development, the worse the sight. A nation of students and bookworms as the Germans show an enormous percentage of myopia. Statistics vary. Dr. Wm. Carhart in an examination of 1,000 children in the United States found 48.5 per cent. astigmatic; 44 per cent. hypermetropic; 3.5 per cent. myopic.

Dr. F. Allport, as a result of 8,000 examinations, found 30 per cent. myopics; while in some examinations made in London only 4 per cent. had normal vision. The worst feature of the subject is the probability that these defects will be handed down to posterity. The following causes are suggested:

- (a) Living and reading in badly lighted and ill-ventilated rooms.
- (b) Using small print.
- (c) Uncomfortable seats, with faulty postures for reading.
- (d) Too long hours of study.—Editorial in *Pædiatrics*, July 15, 1897.

ADENOID VEGETATIONS.

Etiology. (1) Catching cold in an ill-nourished or delicate child produces some swelling of lymphatic tissue, which never completely subsides. This renders the child more susceptible to colds, etc., etc. And thus the vicious circle is kept up.

(2) Any disease which produces nasal catarrh and pent-up secretions, *i.e.*, measles, and bronchitis.

(3) Rickets.

(4) Hereditary—the writer says that he is old-fashioned enough to consider adenoids as due sometimes to a tubercular habit of body. Very many cases were found in which adenoids existed in the parents. In 30 per cent. of the author's cases the vegetations occurred in other members of the family. A family of seven came in one day to have their adenoids removed. (This would be due not so much to family influence as to the probability of a similar cause operating in the different members of the family).

Symptoms. (1) Snoring occurred in 90 per cent. of my cases.

(2) Dribbling, the discharge often being bloody, in 72 per cent.

(3) Deafness in 60 per cent.

- (4) Otorrhœa in 33 per cent.
- (5) Nasal discharge in 36 per cent.
- (6) Epistaxis in 14 per cent.
- (7) Headache in 55 per cent.
- (8) Mental dulness in 28 per cent., but thinks this is due to the deafness rather than the adenoids.

Treatment. Always operative. Chloroform or the A.C.E. mixture always used. Allow the head to hang over the end of table. Use finger nail and Gottslein's curette.

Ill effects after operation. Acute earache, deafness, otorrhœa, fever and delirium lasting a week; acute cervical adenitis, lobar pneumonia. In one case, four weeks after operation, a discharge from both ears started, followed by cerebral abscess and death.

Cause of these bad effects. Cases were all hospital cases, and the children were removed immediately after operation. Author thinks that this removal in inclement weather caused some of the sequelæ.

Results. (1) Quite successful, 72 per cent.

(2) Practically successful, 12 per cent.

(3) Improvement only, 12 per cent.

(4) No improvement, 4 per cent.

Recurrence took place in 11 per cent., *i.e.*, return of the adenoid tissue.—Ralph H. Crowley, M.D., London, from *Pædiatrics*, May 1, 1897.

NON-TUBERCULAR POSTERIOR BASIC MENINGITIS IN INFANTS.

J. Walter Carr, at the Royal Medical and Chirurgical Society, London (*Pædiatrics*, Sept. 1, 1897), says:

This is a distinct form of meningitis, occurring exclusively in infants, which has not yet received sufficient attention. Described by Drs. Gee and Barlow, in 1878, under the title of "The Cervical Opisthotonos of Infants" (St. Bart's. Hospital Reports). The disease affects the posterior part of the brain, is independent of tubercular disease, runs a sub-acute or chronic course, with characteristic symptoms, can be diagnosed during life, and presents very definite and constant p.m. symptoms. Dr. Carr gave the history of eleven cases. Symptoms were severe vomiting, extreme head retraction, and stupor, passing into coma of remarkably long duration, generally several weeks. Cases all terminated fatally; none in less than five weeks, while some lived for three months. Post mortem findings were: inflammation of pia and arachnoid over a very definite area; hydrocephalus was present in all the cases.

He then proceeded to discuss etiology and treatment.

HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

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ASSISTED BY

J. W. SMUCK, M.D.

REPORT OF PROVINCIAL BOARD OF HEALTH FOR AUGUST.

Total number of municipalities in the province, 745; number which made returns for August, 405.

Table showing total deaths returned from the several contagious diseases for a population of 1,289,661 were 189, or at the following rate per 1,000 for municipalities which made returns, calculated on a per annum basis. (Total population of the province, 2,233,117.)

	Population and % of whole.	No. of deaths from and rate per 1,000 per annum.						Total.
		Scarlatina.	Diphtheria.	Measles.	Whooping-Cough.	Typhoid Fever.	Tuberculosis.	
Cities reporting.	419,972 (92%)	2 (0.06)	12 (0.3)	1 (0.03)	6 (0.17)	12 (0.3)	50 (1.4)	83
Towns and villages reporting.	233,684 (52%)	1 (0.05)	3 (0.15)	1 (0.05)	2 (0.1)	4 (0.2)	23 (1.2)	34
Townships reporting.....	636,005 (54%)	3 (0.05)	7 (0.13)	5 (0.09)	4 (0.07)	6 (0.1)	47 (0.9)	72
	1,289,661 (60.4%)	6 (0.06)	22 (0.2)	7 (0.07)	12 (0.1)	22 (0.2)	120 (1.11)	189

Of the 40 counties reporting, Lennox, and Addington, and Prince Edward returned no deaths from contagious diseases.

REPORT OF PROVINCIAL BOARD OF HEALTH FOR

Total number of municipalities in the province, 745 ; number making returns for September, 506.

Table showing total deaths returned from the several contagious diseases for a population of 1,382,008 were 204, or at the following rate per 1,000 for municipalities which made returns, calculated on a per annum basis. (Total population of the province, 2,233,117.)

	Population and % of whole.	No. of deaths from and rate per 1,000 per annum.						
		Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Typhoid Fever.	Tuberculosis.	To
Cities reporting.	419,850 (92%)	0	6 (0.2)	0	4 (0.1)	22 (0.6)	45 (1.2)	77
Towns and villages reporting.	293,808 (59%)	2 (0.08)	9 (0.3)	2 (0.08)	5 (0.2)	8 (0.3)	38 (1.5)	64
Townships reporting	668,350 (67%)	1 (0.01)	9 (0.1)	2 (0.03)	3 (0.05)	9 (0.1)	39 (0.7)	63
	1,382,008 (61.9%)	3 (0.02)	24 (0.2)	4 (0.03)	12 (0.1)	39 (0.3)	122 (1.0)	204

HEALTH OFFICERS FOR CITY SCHOOLS.

In Berlin an effort is being made to have a physician attached to every four or five schools in the city, and whose duties, according to the proposed law, shall be to see that every child when it enters the school shall have a certificate from the family physician, stating the child's physical condition, its weight, what illness it has had since its birth, and if it has any special tendency towards certain diseases by inheritance. Upon this short account shall be based the child's course of study, and nature and amount of exercise. Furthermore, the physician is to see that all sufferers from epidemic diseases are to be kept from the schools, together with brothers or sisters, to examine each child for optical defects, and to insist that it be properly fitted with glasses ; to arrange the hours for study and when recesses shall occur.

PUBLIC MEDICINE SEC. C., AT THE BRITISH
MEDICAL ASSOCIATION.

At the recent meeting of the British Medical Association in Montreal, this section, which should have been most popular and interesting to public and practitioner, was sometimes poorly attended.

TUESDAY, AUG. 31.—FIRST DAY.

The meeting held in the large hall of Laval University was presided over by Dr. Rottot, Dean of the Medical Faculty. Professor Ch. Richet, the delegate of the French government and of the Faculty of Medicine of Paris delivered an address on

THE WORK OF PASTEUR AND THE MODERN CONCEPTION
OF MEDICINE.

It is hardly possible to condense this brilliant and eloquent plea for the recognition of the services rendered to medicine by science. The work of Pasteur is a convincing demonstration of the fact that it is by experimental science alone that medicine has made and can make any progress. The steps of Pasteur's life work were traced, commencing with his early analysis, by polarization, of the two forms of tartaric acid. This led to his memorable demonstration of the true nature of fermentation, which opened a new world to science. Then came his series of experiments disproving the theory of spontaneous generation, and conclusively showing that organic fluids undergo no change until living germs gain entrance into them. This was the first step in the microbic theory of disease, proved in the first instance by Pasteur's research, in 1867, on silk-worm disease, and importing into pathology a fact which has revolutionized medicine. Nor did Pasteur's work stop here; his discovery of the principle of vaccination is known to all. "Fermentation, infection, contagion, vaccination; here in four words we learn the work of Pasteur. What more need I say? Do not these four words possess in their simplicity, unequalled eloquence?" Pasteur's researches have been extended by Lister and others, until modern medicine scarcely knows how much painstaking investigation was required to lay the foundation.

WEDNESDAY, SEPT. 1.—SECOND DAY.

The meetings of the section proper were held in the large lecture room of the Redpath Museum, Dr. E. P. Lachapelle, President of the Quebec Provincial Board of Health, presiding. The chairman opened the meetings of the section with an address on

THE PROGRESS OF SANITATION IN CANADA.

Dealing first with the history of hygienic legislation under the French *regimé* prior to 1763, and then with the period covered by the next hundred years until confederation in 1867, an exceedingly interesting account was given of the measures adopted in early times for the perservation of public health. With the advent of confederation began a period of positive systematization. Sanitary laws in reference to immigration and quarantine, the prevention of contagious diseases in animals, the suppression of food adulteration, and the compilation of statistics were controlled by the federal authority. With the exception of the decennial census, this latter is done by the provinces. The prophylactic treatment of local contagious ailments, the sanitation of public and industrial establishments, of dwelling-houses and of schools, the routine food inspection, and the compilation of vital statistics is done by the provinces, assisted by the municipalities. Provincial, and under them the local boards managed these matters, at all times subject to the legislature's approval. Canada is making rapid strides along the path of progress, and in the near future she will not be inferior in sanitary matters to any other country.

Next came a discussion opened by Dr. P. H. Bryce, secretary of the Ontario Board of Health, on

HOW FAR SHOULD MANDATORY MEASURES GO IN DEALING
WITH MEASLES, WHOOPING COUGH AND LEPROSY.

Four points had to be taken into consideration : (1) the rate of mortality, (2) the method of communication and contagiousness of the disease, (3) the duration of the disease, and (4) the public opinion which existed.

In England measles and whooping-cough caused a very large number of deaths, but this had not led the authorities to adopt or the public to submit to the same measures as for scarlatina or small-pox. The speaker saw no way to stamp out measles in Ontario but by the daily notification by schools of every absentee reported sick ; then investigate and isolate in the homes. For whooping-cough it would be necessary to exclude from school every child with a cough or cold. For tuberculosis the Pan-American Medical Congress, by resolution, insisted on compulsory notification by householders and physicians, regulation of residence of patients, and the establishment of hospitals. Until county and provincial sanatoria are established there is little use in compulsory notification for tuberculosis.

Dr. C. A. Probst, secretary of the Ohio State Board of Health, advocated mandatory measures strongly, especially in regard to tuberculosis. Although at first these might have limited success, he believed they would ultimately succeed, and should, therefore, be carried out. He condemned overcrowding of tenements, and lack of sufficient yard space.

Dr. H. Handford, Medical Officer of Health, Nottingham, England, presented the British view of the case and opposed anything like mandatory measures, which had been a complete failure in England. There the people had been so educated that moral pressure alone was sufficient.

Dr. William Oldright, of Toronto, spoke regarding sanitary regulations and compulsion. He dwelt on the value of education and persuasion, but thought compulsion was sometimes necessary. In England measles was more severe than in this country, but here whooping cough was much more to be dreaded. He had known several cases where death had occurred from children being allowed to go into homes where whooping-cough existed. The moral sentiment of the people needed cultivating with regard to this disease. Children affected by it were allowed to go on boats and street cars regardless of danger to others.

Greater care should be taken with consumptives at health resorts. Often the rooms occupied by such patients are not disinfected, and hence arose a great source of danger—such as when persons traveling infect sleeping cars, their blankets and their rugs.

HEALTH OFFICERS SHOULD SEE TO THIS.

With respect to milk, the Ontario Legislature passed an act enabling cities to have the tuberculin test applied to the cattle of all milk vendors coming into the city, but the milk dealers came down in force and had the operation of the law suspended. The medical officer of the city, however, adopted a very strong persuasive measure, which had been applied with considerable success. He gave certificates to those milk dealers whose cattle had undergone the tuberculin test, stating that such was the case. This was placarded on the wagons and shop windows, and acted as an inducement to the public to buy, and to other dealers to have the test applied. With regard to isolation hospitals for several diseases, the danger of patients coming with one disease and contracting another must be borne in mind. With regard to leprosy, he should be glad to hear from gentlemen who had had experience of the disease.

Dr. Wolfred Nelson, of New York, formerly of Montreal and

Panama, referred briefly to his experience of leprosy in the Isthmus of Panama. Speaking generally, he deemed it non-contagious.

Dr. Benjamin Lee, secretary State Board of Pennsylvania, stoutly contested this view.

Dr. Ebenezer Duncan, of Glasgow, emphasized the necessity for more ample air space and ventilation, and removal of consumptives from overcrowded houses.

Dr. Carr, of England, suggested that, as the section seemed to be in accord in essentials, it might be well to point out the differences. All agreed on the advantages of isolating cases of scarlet fever and of phthisis. He deemed ventilation very necessary.

Sir James Grant, of Ottawa, referred to scarlet fever in Ottawa before they had drainage, and cited a case where scarlatina maligna killed four in one family in two days. He traced it to a damp cellar and defective drainage. He dwelt at length on scarlatinal infection and glandular infection.

Dr. Alex. Johnston, of Glasgow, thought much might be done by oversight in the schools.

Dr. James Neech, M.H.O. of Alberton, read a paper on "The Period of Infection in Scarlet Fever." He thought this should be regarded at a minimum of eight days and a maximum of thirteen.

Also one by Dr. Hough, of New Bedford, and Dr. Mother, on "The Organisms which feed on the Cadaver." This was illustrated.

THURSDAY, SEPT. 2.—THIRD DAY.

In opening the proceedings Dr. Lachapelle made a few remarks on the existence of smallpox in the city, tending to counteract the mischievous reports which have been sent abroad.

Dr. James MacLeod, of Charlottetown, P.E.I., made some observations on the pollution of ground air in some parts of his city which had no sewerage system. There are tubular sewage wells supposed to dispose of the sewage by means of the underground waters. He described the condition of affairs in Charlottetown, and stated his belief that the ground was unable to take in a continuous supply of sewage without becoming surcharged. He asked the section to condemn the system, as inefficient and dangerous.

Drs. Oldright and Bryce, of Toronto, spoke condemning the system.

Dr. F. Montizambert, Supt. of the Canadian quarantine service opened the discussion on

THE UTILITY OF QUARANTINE.

He contrasted the English and Canadian systems, and pointed out that in England, owing to the number of ports, the comparative

smallness of the area, the most perfect system of sanitation in the homes, the compulsory vaccination, and the vast amount of shipping which touched upon the shores of Great Britain, the Canadian system would be found undesirable and impracticable. England was so thoroughly organized inland that she could afford to relax a little at the port of entry, while in Canada it was necessary to carry out strict quarantine regulation, for if a case were allowed to proceed inland, the person might travel a week, spreading contagion before detection. The best triumphs of sanitation were negative. The chief thing in a country like Canada, a country of distances, was prevention.

Surgeon-General Wyman, of Washington, Supt. of the United States quarantine and marine hospital service, detailed the national and state systems now in vogue. The present system commences with the examination of vessels and passengers at the port of departure, and is continued at the port of arrival. Dr. Wyman made an appeal for an international sentiment regarding the sanitation of sea-ports.

The conclusions of a paper from Dr. Duncan, secretary of the British Columbia Board of Health, were read by Dr. Littlejohn. The paper suggested the vaccination of all Chinamen before leaving the ports of that country, the barring out of all diseased Celestials, and a union of the Canadian and United States quarantines on the Pacific coast.

Dr. J. B. Kaye, Wakefield, Medical Health Officer for the West Riding of Yorkshire, said that England trusted more to the various local authorities and to compulsory notification than to quarantine.

Dr. Monkton Copeman, Medical Inspector to the Local Government Board of England, described what was done to keep out cholera in 1893.

Sir James Grant, Ottawa, paid a tribute to the work done by Dr. Montizambert and the efficiency of Canadian and United States quarantines.

The discussion was continued by Drs. Reynolds, Chicago ; Oldright and Bryce, Toronto ; Felix Formento, New Orleans, and others.

Dr. Copeman read a paper on

THE ALLEGED DANGERS OF VACCINATION AND THEIR PREVENTION.

He laid stress on the necessity for strict precautions in having pure vaccine, and an aseptic condition of instruments and hands. Although erysipelas, abscesses, and other outward manifestations

followed, yet the mortality was not one-seventh of that caused by the administration of chloroform. Lymph mixed with fifty per cent. glycerine gave the speaker the best results.

A short discussion followed.

Dr. Wyatt Johnston, of the Quebec Provincial Board, read some notes on "The Disinfection by Means of Formaldehyde," and Dr. McTaggart explained the apparatus.

Dr. May read a paper on the "Relationship of the Health Office to the Registration and Certification of Deaths."

FRIDAY, SEPTEMBER 3.—FOURTH DAY.

A paper by Mr. George Janin, C.E., formerly of the Corps des Ponts et Chaussées of France, and now of Montreal, was read by Mr. C. de Martigny on

THE DIFFERENT PROCESSES RECOMMENDED FOR THE TREATMENT
OF SEWAGE—MECHANICAL, CHEMICAL, AND EPURATION
BY THE ARABLE SOIL.

In a concise manner the paper described the attempts which had been made in other countries to purify sewage, with the indifferent results attending the same. This led up to the purification through filtration or irrigation of permeable soil. The effects of this system in both France and Germany were successful from a hygienic and economical point of view. The chief features of sewage farms were described, and how the crops were nearly doubled by them. Sanitarians in France, Germany, and England had approved of them.

Dr. Bryce, of Toronto, said that sewage farms had been conducted with success in various parts of Ontario. At the London Asylum for the Insane a foreman, with a few of the milder lunatics, had in 1895 realized two to three hundred dollars' worth of vegetables.

Dr. La Chappelle asked whether the freezing of the land would not prevent the filtration of water.

Dr. Bryce replied that sub-surface irrigation had been found very successful, besides, the snow prevented the earth from freezing to the depth it would otherwise.

Dr. Oldright instanced Dantzic, Pullman, Ill., and a State asylum at Augusta, Maine, where sewage farms make a success in spite of intense cold. He pointed out that, contrary to the supposition of some of our English confrères, the protection of streams has given rise to serious consideration and legal complications in this country.

Dr. Alex. Johnston, of Glasgow, said that in Scotland the rivers were found to become more and more filthy, and his city was now

spending millions of dollars to counteract the effects of making the Clyde an open sewer. He wished it were possible to cleanse rivers from time to time.

The discussion was continued by Dr. Probst, Ohio; Dr. Shrader, Iowa; Dr. Herrick, Cleveland; Dr. Hutchinson, Buffalo; and Dr. Carr, England.

Mr. J. J. Mackenzie, Bacteriologist to the Provincial Board of Health of Ontario, read a paper on "Results of Mechanical Filtration Plants in Ontario." The percentage reduction of bacteria had varied with varying circumstances, but had been very satisfactory, and Dr. F. F. Westbrook, Bacteriologist of the State Board of Health of Minnesota, a paper entitled "A Preliminary Communication on the Baccilli of Diphtheria when it is Epidemic."

Prof. Shuttleworth, of the Toronto Health Department, contributed a paper on "Etiology and Dissemination of Diphtheria." An interesting and practical discussion took place as to the period of contagion, as laid down by the clinician and bacteriologist respectively.

There was an interested audience in Windsor Hall in the afternoon when Dr. Herman M. Biggs, of New York, delivered the address on public medicine. He took for his subject

PREVENTIVE MEDICINE IN THE CITY OF NEW YORK.

He acknowledged the honor conferred, not on himself alone but upon the New York Board of Health and its work. The custom of sanitarians has been to look to England for guidance in such matters. The advance in sanitation in Great Britain had preceded that of any other country. In the United States each State has its own health board, but the agitation for a national board is beginning to be felt. The larger cities have very good organizations, but many smaller towns and rural districts do not receive sufficient attention. The sanitary arrangements in New York (which was taken as a type) consist of inspection, removal, and disinfection, where certain contagious diseases are found to exist. The first municipal bacteriological laboratory was established by that city in 1892. Since that time a great deal of valuable work had been done, and the speaker pointed out the methods pursued. The city of New York has taken advanced ground regarding the reporting of cases of tuberculosis. In the beginning of this year tuberculosis was declared by the health board to be "an infectious and communicable disease, dangerous to public health," and required notification of cases. They have also elaborated, with great care, methods for protecting

the public, as far as possible, from infection by the meat and milk of tuberculous animals.

A system of school inspection is now in force, by which children are excluded if suffering from a disease capable of being communicated. The educational work done has been chiefly by bulletins to the various medical journals and daily press of the city, and sending reports outlining the most recent investigations for prevention and cure of infectious diseases to the practitioners. The rate of mortality will compare favorably with that of any other city in the world, and although sometimes they seemed to be autocratic, the public cheerfully submitted when of public benefit.

In concluding, Dr. Biggs said that although England led in sanitary matters, she must look well to her laurels if she is to continue, or if her cities are to be kept cleaner and healthier than those on this side of the Atlantic.

Dr. Montizambert, in moving a vote of thanks to Dr. Biggs, referred warmly to the good work which is being done by the New York Board of Health, and to the unfailing courtesy shown by the United States health authorities to their Canadian confrères.

Dr. Harvey Littlejohn seconded the motion, which was carried unanimously.

J. W. S.

Editorials.

THE DEATH OF THE DUCHESS OF TECK.

THE Duchess of Teck was dearly beloved by all classes of people in England, and the recent announcement of her death, after a very brief illness, caused universal regret. About seven months ago Her Royal Highness suffered from strangulated umbilical hernia, but an operation performed by Mr. H. Allingham gave immediate relief. Her convalescence was rapid and she was able to take part in the ceremonies of the jubilee. During the month of October, she was in her usual health, until the 25th, when she became indisposed, and consulted Dr. Wadd, of Richmond. The next morning she had slight symptoms of obstruction, which became so urgent in the evening that Mr. Allingham again operated, and found a strangulation in the neighborhood of the old umbilical sac. Death occurred two hours after the operation from cardiac failure.

UNIVERSITY OF TORONTO.

THERE is an opinion in the minds of many that the University of Toronto should be freed entirely from government control. The feeling in this respect has grown with amazing rapidity in recent years; and this fact is perhaps better appreciated by outsiders than by those within the university circles. At the last session of the Ontario Legislature an interesting discussion occurred on this subject. The members of the Opposition boldly attacked the policy of the Government in reference to University matters.

While in "Committee" on the supplementary estimates, Mr. Whitney, the leader of the Opposition, moved the following amendment: "That this House is of opinion that the interests of the University of Toronto, and the availability of it for educational purposes, will be best served by its complete separation from, and independence of, the Provincial Government, and by vesting the property and entire control and management of the institution in a properly representative and independent body."

In speaking to the amendment, he quoted from Professor Goldwin Smith, of Toronto, as follows: "The most important of the suggestions which I have to offer, and which I believe will meet with extensive concurrence, is that the university should be separated from the political Government of the province and placed, like the English universities, under a government of its own, subject only to the law of the land." "It is well known also that connection with Government operates as a bar to private benefaction. The Government would lose little by the change, while it would be relieved of some embarrassments."

The Minister of Education, in reply, stated that the Government had abstained from undue interference with university matters, and that he had purposely avoided attendance at meetings of the Senate so that there could be no suggestion that he could not deal fairly with statutes which came before him. He thought the proposed changes would disorganize the whole system of education, and would materially affect the university's affiliations.

It is in some respects unfortunate that the proposed change of policy has become an issue between the two parties, because it embarrasses those who have no fault to find with the Mowat and Hardy Government in its administration of university affairs, and yet are strongly opposed to the present system of Government control.

We believe the majority of the friends of the university are in favor of a change in the direction indicated by Mr. Whitney, but the supporters of the Government may hesitate to take a stand which may injure their leaders. We think, however, very few will characterize as incorrect the statement of Professor Smith that the connection of the university with the Government operates as a bar to private benefaction.

THE CHAIR OF SURGERY IN GLASGOW AND THE WESTERN INFIRMARY.

IT appears that serious difficulties have arisen between Dr. Macewen, the highly distinguished surgeon of Glasgow, and the managers of the Western Infirmary. We learn the following particulars from the *British Medical Journal*. In 1893 Dr. Macewen was appointed Professor of Surgery in the University of Glasgow, and by virtue of such appointment became senior surgeon to the Western Infirmary. According to an arrangement made between the authorities of the infirmary and the Senate of the University, Dr. Macewen was to have forty-one beds placed at his disposal ;

but, as a matter of fact, he was "requested in the meantime to take charge of ward 18, containing twelve beds, as a convenience to the managers." Thus for four years he has had fifty-three beds instead of forty-one.

Dr. Macewen found the operating theatre in such an unsatisfactory condition, from a sanitary point of view, that he refused to operate in it, and used, instead, a corridor on one of the landings from which his wards open, which he had fitted up as suitably as possible under the circumstances. Recently the managers appreciated the importance of Dr. Macewen's views in this regard, and erected three new theatres. Dr. Macewen wishes to have sole control over one of these theatres, and also wishes a larger number of nurses for the work in his wards. At the same time he objects to the action of the managers in deciding to take from him the twelve beds in ward 18.

The managers reply that as "there are at least six surgeons on the visiting staff, all of whom have important operations to perform, it is hardly reasonable, in justice to the others, to suppose that the managers will be able to set aside one of these theatres for the exclusive use of any individual member of the staff." With reference to the nurses, they say after careful investigation, that Dr. Macewen's "requests for extra nurses have been adequately met by the superintendent," and they add that "his wards are an integral part of the Western Infirmary, and that he himself is only one of the staff; that there are rules applicable to the institution which it is the duty of managers and their officials to administer uniformly; that, on the one hand, emergencies arise in the administration, in the inconvenience of which Dr. Macewen must share; and, on the other, while a certain amount of the work of the surgical wards comes without warning, a great deal of it can be arranged and distributed by the staff surgeons, so as not to cause any strain upon the resources of the house, or put the nurses and others to unnecessary inconvenience." With reference to the twelve beds which were temporarily allocated to Dr. Macewen, they decided that the requirements of other departments justified the change, which did not conflict with the agreement of 1893.

The *British Medical Journal* replies in an angry article, which contains but little in the way of dignity or logic, and supports Dr. Macewen's claims in their entirety. Dr. Macewen has certainly done magnificent work for many years, and deserves the most kindly consideration; but it is not well for any individual member of a surgical staff to ask for too much, or show a disposition to "want the earth."

ANNUAL ANNOUNCEMENT OF THE ONTARIO MEDICAL COUNCIL.

WE have received the announcement of the Ontario Medical Council, with a report of the proceedings of the July meeting ; and, after examining it with some care, have concluded that the reports with reference to the "bear-garden" character of the discussions were to some extent exaggerated. We find that many subjects of considerable importance received very careful and apparently conscientious consideration. Since our comments appeared in the August number we have been told by various parties, members of the Council and otherwise, that our strictures at that time were too severe, considering the proceedings as a whole.

We are quite willing to acknowledge that there is some truth in such allegations. The lay press, in its reports, evidently took a certain amount of pleasure in referring only to those portions of the proceedings that were most objectionable, *i.e.*, the spicy passages-at-arms which occurred at times, while at the same time the creditable parts of discussions were overlooked.

Unfortunately, there can be no defence of the tone and character of the discussion of the following clause of the report of the Executive Committee: "Your committee deems it only right to report to the Council that we deeply regret that one of the members of the Council, who was present as a member of the Legislative Committee, should have felt himself called upon to denounce the petition before the Premier and Government, notwithstanding that an agreement had been entered into beforehand that the Executive Committee and Legislative Committee should be unanimous in their presentation. Your committee expresses their sincere regret that the denunciation by the member of the Council present had the effect of showing a divided Council, and took away from the petition, to some extent, the good which it would undoubtedly have produced." After a prolonged and very "bitter" discussion the clause was carried, the following voting nay: Drs. Armour, Barrick, Hanly, Henry, McLaughlin, Reddick, and Shaw. This was practically a vote of censure on Dr. Sangster.

We are pleased to notice that the conduct of the president, Dr. Thorburn, was highly appreciated. Dr. Williams, in moving a vote of thanks, spoke of the "pleasant, agreeable, dignified, and impartial manner in which he conducted the business of the Council." Dr. Sangster, in seconding the resolution, said "his conduct in the chair has been courteous and dignified in the extreme." When Drs. Wil-

liams and Sangster are so thoroughly in accord we feel inclined to accept their views without reservation. After some favorable comments from Drs. Moore and Geikie, the motion "was carried unanimously amid much applause."

THE VICTORIAN ORDER OF NURSES.

WE again refer to the proposed new order of nurses with a certain hesitation, having in connection therewith a high appreciation of the motives of its promoters. The subject has been discussed in all its bearings in various parts of Canada with fairly uniform results as far as the medical profession is concerned. In Ontario we believe that 99 per cent. are opposed to any such establishment. Sir William Hingston and Dr. Borden are surprised and shocked that such should be the case; and, yet, Ontario remains unmoved. Winnipeg, Victoria, Halifax, and various other cities and localities are opposed to the scheme. In fact we know of no city, town, village, or municipality of any sort in any part of Canada where a majority of the physicians support the new order.

We have heard comparatively little from nurses, but can speak for those in Toronto, where there are a number of training-schools. The feeling among the nurses of this city is one of consternation. From their point of view the equilibrium between supply and demand has already been seriously disturbed. It is well known to all who pay any attention to the subject that the supply of trained nurses has for some time exceeded the demand, and this is probably more pronounced to-day than ever before.

As for physicians we cannot see that an influx of new and cheap nurses will materially affect their interests; but among our trained nurses, many of whom are not yet earning a livelihood, there exists a fear that the new order, if as successful as its promoters hope and desire, will bring practical ruin.

A correspondent in this issue calls attention to the work that is being done in a quiet way by our nursing-at-home mission in Toronto. This worthy charity is sadly crippled for want of funds. We had pleasure in referring in a recent issue to the magnificent work which has been accomplished through this institution during the last few years. We are glad indeed to find that its promoters and supporters feel greatly encouraged on account of the interest which the charitably disposed are taking in its welfare. If the wealthy people of Canada aid this and sister institutions by substantial gifts in the way of money we believe it would do more good than the importation of an army of new nurses from Great Britain and the United States.

Correspondence.

THE NURSING-AT-HOME MISSION *VERSUS* THE ROYAL VICTORIAN JUBILEE ORDER OF NURSES.

To the Editor of THE CANADIAN PRACTITIONER.

SIR,—I see that at the monthly meeting of the Nursing-at-Home Mission, held on Friday last in the Y.M.C.A. Hall, the managers presented a report showing \$56.45 on hand. There were thirty-eight patients on the books for October, and the district mission nurses paid in all to poor patients 375 visits. Surely this good work need not and should not be interfered with by the irregular introduction of nurses from abroad, through the projected scheme, now being floated under vice-regal patronage, called "Royal Victorian Jubilee Order of Nurses."

We have enough good women in Toronto and in Canada to do this work without the importation of foreign or extraneous material, very likely to be picked from the streets of London and New York, whose only semblance to modesty is the "quiet and unassuming garb" of a trained nurse.

Let us as Canadians protect our own good women and the name of "nurse" with a hallowed reverence from all outside interference, and let the pulpit and the press thunder their disapproval of a scheme so justly unpopular among the medical profession of the Dominion as being a dangerous innovation in this new country of ours, where even "trained nurses" have vested rights.

Our M.P.P.'s will be called upon to take action in the Houses of Parliament should this very unsavory and unnecessary institution be planted in our midst against the wishes and advice of those of our citizens who alone are competent to express expert opinions on its value or usefulness at the present time.

CANADIAN GRADUATE.

Meetings of Medical Societies.

TORONTO MEDICAL SOCIETY.

THE regular meeting of the Toronto Medical Society was held in the Council Building, Oct. 14th, 1897. The last meeting's minutes were read and adopted. Present: Drs. McMahon, Parsons, Oakley, Graham, Dwyer, Bryans, Chambers, Clarence Starr, Hunter, Carveth, Hay, Bascom, Galloway, B. E. McKenzie, McPhedran, G. B. Smith, W. J. Wilson, Wm. Oldright, C. J. O. Hastings.

Dr. R. J. Dwyer presented a laborer, aged 60, with a large abdominal tumor of a year's growth. It had caused no pain, but was now distressing his breathing. It had caused vomiting at first. Nodular masses and fluid could be felt on palpating it. Patient emaciated, but in fair health, bowels being regular and urine normal. Diagnosis: probable carcinoma of the peritoneum. Drs. McMahon, Oakley and Graham briefly discussed the case.

Dr. T. F. McMahon presented a girl, aged 20, with an ankylosed elbow, following rheumatism. The patient gave a decided rheumatic family history and had several attacks herself. He asked if the adhesions should be broken down. These cases were rare.

Dr. J. E. Graham reverted to two or three similar cases of ankylosis he had seen following what was probably a septic arthritis.

Dr. B. E. McKenzie reported a case of this sort in which he had broken down the adhesions in the two elbows several times, one then being put at rest and the other given passive motion, but only to be followed by a condition of ankylosis again. He thought breaking down was justifiable in the case presented.

He has seen ankylosis in the knee-joint follow rheumatism in a woman aged 35. He suspected in this case the poison, as in other cases of the sort, was gonorrhœal.

Dr. John Hunter presented two patients he had referred to Drs. B. E. McKenzie and H. P. Galloway.

The first case was a girl, aged about ten, suffering from spinal curvature. It commenced about two years ago and was accounted

for by a valgus condition of the feet. This was a most suitable case for therapeutic gymnastics. The feet would also be treated.

Dr. W. J. Wilson asked how plates for supports would do for the feet.

Dr. McKenzie said he would not use plates, but rather try to develop the muscles whose tendons ran along the inner side of the foot and induce supination. He pointed out that this was not flat-foot in the literal sense of that term, but a condition of over-pronation. A proper boot should be fitted to the foot.

Dr. Oakley spoke of a patient, aged 60, under his care, who had been a life-long sufferer. The condition was due to talipes equinus which was very marked in one foot.

Dr. T. Webster explained how bicycling would be beneficial in these cases of over-pronation.

Dr. Hunter's second patient was a young man, aged twenty, who had with his spinal curvature suffered a great deal of pain in the lower part of the spine, and over the lower abdomen, accompanied by frequent micturition. Dr. Galloway pointed out the condition of the spine—a distinct scoliotic condition with some rotation of the vertebræ. The symptoms of the case indicated a possible lesion of the bones at that point. The kyphotic condition pointed to Pott's disease. Dr. McKenzie said that the kyphosis was a distinct condition present, apart from the lateral curvature. Taken with the fact that râles had been found in the lungs, it pointed to ordinary caries; although there were certain things against this. There had been pain in the back for five years at the seat of the lesion, which was not usual in caries. Again, he was able to use the back pretty freely. There was a possibility it was malignant.

Dr. Frederick Fenton read a paper on

INTESTINAL AUTO INTOXICATION IN CHILDREN.

The first indication of this condition in many children, except for some malaise, not infrequently, was a convulsion. The doctor finds the temperature usually elevated, and the tongue lightly coated with a whitish fur, and a tendency for the fit to return. This state being due to some irritant, the treatment should be directed toward the removal of it. The best means of doing this, in the essayist's experience, was the rectal douche. Immediate relief was usually afforded by this means. A number of cases were then cited in which the convulsions due to auto-intoxication had been so treated with pronounced success. Intestinal antiseptics were of little value. "Imagine," said the speaker, "a surgeon attempting

to sterilize a sinus fifteen feet long by introducing one-sixtieth of a grain of bichloride of mercury every three hours." They might, of course, delay fermentation. The irritant, in these cases, Dr. Fenton holds to be a chemical one, either the product of disordered digestion or a germ toxine.

Dr. Harold Parsons spoke of the great value of the douche, not only in the acute, fulminating cases, but also in the chronic. He thought the irritant was usually bacterial or chemical. He praised the work of Bucher on bacterial intestinal intoxication. He thought the mechanical irritants would give rise to colic rather than to nervous disturbances.

Dr. W. J. Wilson believed the intoxication manifested itself in different ways. In some cases there was drowsiness instead of convulsions, little rise in temperature, headache, perhaps symptoms of typhoid etc.; the symptoms usually disappeared upon clearing the bowel.

Dr. Oakley said his practice was to give calomel and the bromide in these cases.

Dr. C. Hastings said the plan of irrigating in these cases was important. His practice was to give two injections, the first to allow the tube to be inserted high up, the second time to get the bowel well emptied.

Dr. McPhedran thought there was a good deal of absorption in these cases from the small bowel. He believed in making patients fast, but in allowing them plenty of water. He called attention to the value of injections, repeated at close intervals.

Dr. Webster advised beside the rectal douche the administration of castor oil.

Dr. W. Bryans said he gave chloroform to subdue the convulsions, or bromide of potash, and calomel in repeated doses to clear the bowels.

Dr. Fenton closed the discussion.

It was moved by Dr. Hay and seconded by Dr. Galloway that inasmuch as high grade microscopes are not manufactured in Canada, it is the opinion of this society that they should be admitted free of duty, and that a copy of this motion be sent to the Federal Government.—Carried.

The society then adjourned.

The regular meeting was held in the council building, Nov. 4th. Dr. T. F. MacMahon presided.

The minutes of the last meeting were read and adopted.

PERNICIOUS ANÆMIA.

Dr. Alex. McPhedran presented a man, aged about 55 years, who had entered the hospital last summer for treatment. He was prostrate, delirious, and presented a very anæmic appearance. Blood count showed 480,000 per c.m., hæmoglobin 20 per cent. There was a good deal of vomiting and some diarrhœa. He was treated by subcutaneous injections of normal saline solution on every alternate day, and the intervening by saline enemata. He was also given arsenic. The patient is practically well, although there is some weakness of the legs, the muscles being tender. He may have had a peripheral neuritis. The sensory nerves were only slightly affected. In another case the speaker had, there was well marked peripheral neuritis with recovery.

Dr. Geo. Bingham read a paper on

INJURIES TO THE VERTEX.

In opening, the essayist pointed out how nature was more handicapped in effecting cures to injuries to the brain than in other parts of the body, owing to its enclosure in a closed, bony cavity, and the susceptibility of that region to the invasion of pathogenic organisms. After referring to the various sequelæ of injuries to the brain, the doctor pointed out the increased danger to the old and the young from depressed fractures, owing to the absence of the diploe. It was worthy of remark the amount of hæmorrhage which might occur from a brain sinus, and the amount of brain tissue which might be sacrificed without apparent injury to the patient. Trephining was as justifiable an operation, and as free from disaster as an exploratory incision of the abdominal wall. Wounds of the scalp varied according as they were subcutaneous, sub aponeurotic, or epicranial. The two contingencies were hæmorrhage and sepsis. The importance of the first dressing could not be overestimated. The scalp was a hard portion to sterilize. Strict antiseptic precautions were very necessary. Wounds of the skull might be inflicted by gunshot, pointed instruments, or blunt instruments. He would consider the last two. They might be penetrating or non-penetrating. In the latter, the expectant plan of treatment was indicated. One must not always trust to nature. The diploe might be penetrated. If there was any doubt about the extent or asepticity of the wound, it

would be safe to trephine the diploe to ascertain the extent and character of the wound. In penetrating wounds of the skull, the trephine was invaluable, not only to ascertain the amount of injury, but to relieve anything which might cause pressure. Wounds through mouth or nares should be carefully antisepticized. Blunt instruments were likely to cause fractures; and these might be classified as simple undepressed, simple depressed, compound undepressed, and compound depressed. The difficulties in diagnosing simple depressed fractures were very great. The sensations of the patient were to be noted. The introduction of a needle through the soft parts was of value in determining the presence of a depression. An exploratory incision, under strict asepsis, was to be commended. The diagnosis of compound depressed fracture was more simple; but it was well to remember that the site of the fracture did not always correspond to the site of the wound in the soft parts. The wound should be enlarged and the surrounding area examined. In the simple depressed, surgical interference to raise the depressed bone was called for.

In compound fracture of the vertex surgical interference was always necessary. The wound should be enlarged and the trephine used.

All splinters should be removed from the membranes or the brain substance, all angles rounded, and hæmorrhage checked. The wound should be closed, drainage being provided for. Temporary sutures should be introduced, ready to be tightened at the end of twenty-four or forty-eight hours. Early dressing was called for. Every such case should be operated on, as well as those in which there was injury to the structures inside the cranium, and the sooner the better for the patient. Dr. Bingham presented three patients; one of whom he had operated on immediately after the operation with a perfect recovery; a second after a lapse of eighteen months, where epileptic attacks had supervened with recovery, except for some slight loss of function of muscles of the face and arm; a third case after a lapse of two and a half years with partial relief of the epileptic condition. The history of these interesting cases were fully given. The society then examined the patients.

Dr. R. B. Nevitt alluded to the success which attended brain operations, since the resuscitation (if he might use the word) of trephining, by the inauguration of antiseptic principles in treatment. The temptation to palpate cranial injuries before carbolicizing or mercurializing the hands was to be overcome. The doctor said it was exceedingly difficult in some cases to know whether to operate.

He recalled a case recently seen by him where the whole of one side of the head had been flattened and the base fractured, where the expectant plan was decided on owing to the supposed impossibility for recovery to occur, where the case did get better. Other cases in his practice were cited, explaining his technique. The flap should be made with regard to the preservation of its vitality, to drainage, and to the prevention of hernia cerebri. Such a flap was that employed by Horsley, whom he followed.

Dr. Wm. Oldright said that, in opposition to the rule laid down by the essayist, he had seen two cases of depressed fracture recover, in which trephining had not been done. The symptoms at the time should guide one. The doctor explained the technique he had observed Horsley employ. The essayist had not touched on cases where extravasation of blood had taken place beneath the membranes. Trephining was done over the seat of injury, and the bulging membranes opened. Unsuccessful in finding anything, the trephining was repeated at the site of *contre coup*, but as there was no bulging the membranes were not opened. *Post-mortem* revealed a clot under the membranes at the site of the second trephine opening. They had forgotten that on account of the presence of first opening there would be no bulging of the membranes at the site of the second.

Dr. Cameron said that, if there was reason to suspect depression, he did not agree that it was right to trephine, unless there was evidence of damage to the brain. It might be the outer table alone that was depressed. A great danger in opening up was due to the great difficulty of obtaining asepticity of the scalp, and a simple fracture was converted into a compound. He thought it was a question whether we should not hesitate to adopt the rule, which was just becoming fashionable, of operating in every case of injury to the skull. The speaker was not much in favor of secondary sutures. In clear cases of depression prompt trephining, elevation and disinfection were indicated. In the third class of cases spoken of by the essayist—the epileptic—there was always great doubt as to the fact whether they had to do with injury received long before. He had had the same experience as the leader of the discussion in seeing a temporary respite from the convulsions. He remarked on the ease with which hæmorrhage could be allayed where a sinus had been opened.

Dr. A. Primrose thought there was no question of the value of immediate operation in the first case presented. The result was a brilliant one. He thought the matter of the occurrence of Jacksonian

epilepsy was seldom or never taken into account in dealing with the primary injury. The surgeon's aim was to put the patient in the best possible condition for subsequent recovery. His practice in scalp injuries was to drain when the pericranium was cut. Scalp wounds healed with great readiness and without suppuration in his experience.

He cited a case where the scalp wound reaching from the sphenoidal to the occipital bone, and the flat was turned down over the ear, which he treated with 1 in 20 carbolic and a nail brush, healed by first intention.

Dr. N. A. Powell said that he has had about the ordinary degree of success in cases of trephining, which he had been called to do in the earlier days of his practice among lumbermen and other engaged in dangerous occupations.

He did not believe in operating on idiots. A comparison had been made of the comparative dangers of cerebral with abdominal operations. He considered those on the brain much more critical, and gave his reasons therefor. The strictest care was necessary as to antiseptics. He instanced a case of cerebritis occasioned by the operator having handled a light during the operation without subsequently cleansing the dirtied hand. He commended the use of Seneca Powell's electric saw as an exact and scientific instrument for going through the skull.

Dr. Bingham closed the discussion.

The society adjourned.

TORONTO CLINICAL SOCIETY.

THE opening meeting of the Clinical Society was held November 10. President Albert A. Macdonald occupied the chair.

In his opening address, Dr. Macdonald referred appropriately to the following topics: The deaths of Drs. Strange and Cook, late Fellows of the society; to the visit of the Old Country scientists to Toronto during the past summer; to the position medicine was taking as an experimental science; to the work of Lister and the possibilities of as great discoveries yet being made in surgery; to the relation of the profession to charities; to the observations he had made while on a recent visit to Europe; to the necessity of medical men upholding medical ethics; and lastly, plead for the earnest co-operation of the Fellows that the society might have a most prosperous year.

Dr. G. S. Ryerson reported two cases of abscess of the brain, resulting from middle ear disease. He laid especial emphasis on the necessity of treating all cases of suppuration of the middle ear until cured.

Dr. Anderson reported having seen five cases of death resulting from neglected ear disease. This was a strong commentary on the remarks of Dr. Ryerson.

Dr. Trow said that there was no disease neglected so much as middle ear disease.

Dr. Ryerson, in speaking of treatment, said he had found the best result from silver nitrate solutions from 60 to 120 grains to the ounce. He drops three or four drops into the ear after cleansing out.

Dr. A. H. Garratt presented a heart with two wounds in it. They had been made by a stab with a pair of scissors. One wound was through the auricular appendage and the other in the aorta just outside the valves.

Dr. Geo. Bingham reported a case of spina bifida in which he had operated. The specimen was shown. The tumor had attained the size of a foetal head and was found (after aspiration, sometimes before) to protrude through an opening about three-quarters of an inch in diameter. The case, which was still under observation, was doing favorably.

TORONTO PATHOLOGICAL SOCIETY.

THE meeting of the Toronto Pathological Society was held on September 25th, Dr. H. B. Anderson in the chair. Dr. Carveth presented a patient with the left testicle out of place. The condition had existed since birth and the patient had suffered no inconvenience therefrom. Later in life a hernia developed on the same side. The testicle lies just external to the external abdominal ring and is found to be very small, but testicular sense is distinct. In front of the organ lies the hernia which has a knotty feeling as though consisting of omentum. No impulse on coughing.

Dr. Oldright asked why an undescended testis was usually undeveloped?

Dr. Primrose had seen two cases of intra-abdominal testis, in which the organs were well developed.

Dr. McPhedran remarked that a normally descended testis may also be immature.

Dr. Anderson said he had found at autopsy, a few days ago, an undescended and immature testicle complicated with a hernia of the sigmoid flexure of the colon.

Dr. Carveth showed a case of

SPLENO-MYELOGENOUS LEUKÆMIA.

Two months after an injury the patient noticed enlargement of his abdomen. Now the abdomen is very prominent, and the spleen found greatly enlarged, extending past the middle line to the right. The notch is distinctly felt, and the lower border of the organ reaches to within a few c.m. of the pubic spine. There is marked anæmia and emaciation—no history of hæmorrhages. There have been several attacks of gastro-intestinal derangement.

When first seen the blood showed one white to six red blood cells, but under treatment with arsenic for six months the proportion was one to twelve, the red cells numbering 3,500,000 per c.m.m.

Dr. Parsons said he had seen the case with Dr. Anderson some months ago. At that time the spleen was much enlarged and the case showed every evidence clinically, of leukæmia. The blood also was typical, the myelocytes of Ehrlich being characteristic, and in considerable numbers. He referred to a case quoted by Dr. Osler (Pepper's System of Medicine) which clearly shows that leukæmia may exist without an increase in the leucocytes. In this case, when first seen, the blood showed 2,000,000 red corpuscles and 500,000 white, and a color analysis gave 14.7 per cent. of myelocytes. Later the white cells increased to 714,000 per c.m.m. After three weeks' treatment with arsenic the white cells had fallen to 7,500 per c.m.m., but the myelocytes were four per cent. of the total leucocytes. At this point, a diagnosis would have been impossible without a color analysis and differential count of the white cells, for the proportion of whites to reds was almost normal; 7,500 whites to 3,500,000 reds.

The direct history of recent trauma in Dr. Carveth's case was interesting.

Dr. McPhedran—with regard to the sudden disappearance of the leucocytosis in the case referred to, mentioned the case of a child recently under his care. The patient was first seen on a Friday. Glandular enlargement was very marked, and the blood count showed a great increase in the white cells. On the following Monday, glands were much diminished in size and the leucocytes were very few in number. At autopsy no enlarged glands were found. Spleen was not enlarged.

All the leucocytes in this case were of the small variety.

Dr. Graham spoke of a patient of his—a boy with enlarged glands of the neck, the blood showing a marked leucocytosis. The glands soon disappeared, but the leucocytosis persisted. Later the abdomen became prominent, the result of a nodular mass. The patient died.

Dr. Graham thought the case was likely one of lympho-sarcoma.

Dr. Parsons referred to the cases in literature by Pel & Elestein, in which, with enlargement of the glands, there were recurring attacks of fever lasting a week or ten days and subsiding, to reappear in a week or two, and so on for an indefinite period. He had seen one such case. The etiology seemed to be infective, but cultures from blood and urine repeatedly made, aërobically and anaërobically, were negative. These cases were usually classed as pseudo-leukæmia.

Dr. Carveth brought up the question of etiology, traumatic or infective.

Dr. McPhedran gave the case of a butcher previously healthy. Early in the spring he cleared a large amount of filth from his yard. He was taken ill in the following May. Entered hospital in June, and died of leukæmia in six weeks from the onset. The case was evidently infective.

Dr. Graham—A healthy boy after working hard in the sun lay down and slept. He died of leukæmia in a few weeks. It was suggested that this was also an infective case.

Dr. Anderson then delivered the presidential address.

Dr. McPhedran eulogized Dr. Anderson on the unusual character and interest of his address.

Moved by Dr. McPhedran, seconded by Dr. Graham, that a vote of thanks be tendered Dr. Anderson for the presidential address so greatly enjoyed by the meeting.—Carried.

Dr. Graham read a paper on

ACUTE YELLOW ATROPHY OF THE LIVER.

(Notes by Dr. Fletcher.)

Mrs. B., aged 27 years. Father died at fifty-four, said to be of abscess of the lung. Mother living and healthy. Sisters all living and well. Mrs. B. had typhoid fever five or six years ago. Dr. Strange, who saw her at the time, said she had been suffering of malaria. Has had no other disease since childhood. Was married at nineteen and had two children. Mrs. B. was very unhappy in her marriage relations. Her husband began to abuse her two

weeks after their wedding, and continued to do so up to the beginning of this year, when she instituted proceedings for a divorce on the grounds of cruelty, neglect and unfaithfulness. In the month of March both her children died of scarlet fever, but she seemed to bear all her troubles bravely and never murmured. On July 6 Mrs. B. came to my office complaining of feeling weak and said she was a bad color. She was slightly jaundiced, motions pale; temperature and pulse normal. July 11—Patient worse, with a constant feeling of nausea and prostration. Spends nearly all her time in bed; jaundice very much greater. Tenderness over the liver, but area of dullness about normal. Bowels move freely, owing to laxative medicines. Takes milk, bovine and broths.

From July 11 to 16 the symptoms grew progressively worse. Jaundice became very deep, patient vomited occasionally, and was scarcely able to recognize me on the morning of the 16th. She had been very restless all night. Passed urine freely up to this time. During the day developed a condition of stupor. Pulse and temperature normal. Pupils dilated but readily contracted when a light was brought near them. Area of dullness over liver less than normal, tympanitic resonance one and a half inches above lower border of ribs. Difficulty in swallowing; tactile sensation impaired. During the night the patient perspired and passed urine in the bed.

17th.—Patient unconscious (temperature at night 104, pulse 120) (in the morning temperature 101, pulse 80). Bowels had not moved for two days. Cannot swallow. Sweating freely. All sensation gone. Patient died at 5 o'clock on the morning of the 18th.

Conversation with various members of the family, since the death of Mrs. B., reveals the fact that the deceased, while appearing cheerful when in the presence of others, yet spent a great deal of the night weeping. She felt keenly her husband's cruelty and unfaithfulness. Her two children died about two months previously, and the necessity of appearing at the divorce proceedings caused her great anxiety.

(Notes by Dr. Graham.)

I saw the patient on the evening of the 16th, with Dr. Fletcher. The patient, jaundiced, but not deeply, was lying across the bed with her head extended backwards. She was in a state of stupor, from which she could be aroused with difficulty. My first impression was that the patient might be in a hysterical coma, but on further examination I gave up the idea. On examination I found all the organs in a fairly healthy condition, and noticed the diminished hepatic dullness. It did not occur to me that the case might

be one of acute yellow atrophy until, afterwards, in discussing the case with Dr. Fletcher. We concluded that the brain symptoms were due to a toxæmia, and the fact of the much lessened area of hepatic dullness led us both to the idea of acute yellow atrophy. A sample of the urine was produced, and examined on the 17th by Dr. Hamilton and myself. Both leucin and tyrosin were found, sp. gr. 1023, reaction, acid, albumen and sugar absent, bile pigment present; bile stained casts, leucin globules and tyrosin needle crystals; urea 7 grs. to oz.

At the *post-mortem* examination urine was drawn by catheter. This did not contain leucin, and very little tyrosin. This I looked upon as a case of acute yellow atrophy, in which death occurred so soon that the hepatic degeneration did not proceed so far as is often the case. The early death of the patient was due either to the previous weakness or the intensity of the poisoning.

Post-mortem twelve hours after death: We were only permitted to examine the liver. On opening the abdomen we found the anterior margin of the liver at least two inches above the costal margin, and had some difficulty in bringing it into view. The organ was not so much atrophied, the volume being about one-third less than normal; the capsule was decidedly wrinkled; the gall bladder was small and contained a small quantity of bile. There were no gall stones. On section the cut surface presented different appearances in different places. Some parts were stained deep yellow, and quite soft and pliable, in other portions the staining was not so deep, and the consistence almost normal. Fatty matter exuded freely from the cut surface. Portions were removed for microscopical examination. Dr. Anderson kindly prepared the specimen, and made the section which you will have an opportunity of examining to-night. We shall be glad to hear Dr. Anderson's opinion with regard to them. In my examination I found parts in which the true liver structure had entirely disappeared, and which were made up of a more or less fibrous network, with a large number of leucocytes. In the other portions there were a few hepatic cells, some of them in a more or less broken down condition. In other places, again, the cells were in a fairly healthy condition, arranged in columns, which were separated by disintegrated tissue. The possibility of phosphoric poisoning suggested itself in either case. There was no phosphorescence either of the portions of the liver or of the urine. The elevation of temperature before death is generally put down as a differential sign in favor of acute yellow atrophy; besides there was no history of poisoning.

Dr. Fotheringham : According to Delafield it is doubtful whether acute yellow atrophy of the liver be a disease primarily or an acute infectious disease with local lesions, and that it is not unlikely that more than one form of lesion is grouped under the heading. Ziegler thinks the etiology of the process may not always be the same.

In phosphorous poisoning the liver is not so small, it is firmer, of greyish yellow or yellow color, and of greasy feel.

Cohnheim distinguished between icterus gravis and acute yellow atrophy by the constant presence in the former of intense jaundice and complete suppression of bile, which are both wanting in acute yellow atrophy.

Fagge uses acute yellow atrophy and icterus gravis as synonymous terms and says the cerebral symptoms are what kills the patient. He lays great stress upon these, saying that apart from jaundice the symptoms are mostly cerebral.

Fagge's diagnostic points are : (1) diminished liver dulness ; (2) leucin and tyrosin in the urine ; (3) internal hæmorrhages and petechiæ ; (4) cerebral symptoms ; (5) temperature frequently low and pulse rapid.

Under etiology the speaker mentioned mental emotion. Sex and pregnancy were important factors. As to age, five out of every six cases were under thirty years, and in favor of the contagious theory, he spoke of the family quoted by Graves, in which two sisters died of this condition at an interval of eight months, and a third developed it three months later but recovered. The fact has also been noted that several sailors in the same vessel have suffered from acute yellow atrophy of the liver.

As to treatment : none is known.

Dr. McPhedran : Our colleague, Prof. A.B. Macallum, made the pathological report on his case, reported in the *British Medical Journal*. He looked upon that report as very valuable.

From the advanced degeneration of the periphery of the lobules, while the central part of many were comparatively healthy. It seems probable that the poison entered the liver by way of the portal vein.

The liver in that case was greatly atrophied, some parts were yellow and others red. It seems probable that the different parts had undergone different degrees of degeneration.

Mr. McKenzie called attention to Flexner's paper on "Toxalbumin Poisoning and the Changes in the Cell due to and Karyolysis." He also mentioned Babe's case, in which there was a streptococcus infection, but the liver was sterile.

Dr. Graham, in reply, said the amount of flatulence in these

cases is often very moderate, and a decided diminution of the area of hepatic dulness when the distension of the abdomen is not great is an important differentiating sign in favor of acute yellow atrophy. The sterile character of the liver tissue, in cases in which bacteria are found in other parts of the body, may be due to the direct action of the hepatic juices in the destruction of micro-organisms. In tuberculosis of the liver Koch's bacilli are usually found in very small numbers, and the pus of hepatic abscesses is frequently sterile.

Dr. B. E. McKenzie then read a paper on

TUBERCULOSIS OF JOINTS,

presenting three specimens.

CASE 1.—G. C. 44. About six years ago struck right elbow against a door and hurt it so that it remained troublesome for a long time. Continued to do his ordinary duties as a student, and found the elbow never quite recovered. While in Germany had some injection made, but does not know what it was. The reaction and pain following were very intense. During succeeding years he gave the joint periods of rest more or less prolonged, during which it improved greatly, so that several times he considered the arm "nearly well." Then using it again, it soon became stiff and painful.

At my first examination movement of the joint was not more than half the normal. There was infiltration especially about the head of the radius, and to a lesser extent at both sides of the olecranon, dulling greatly the natural expression of the joint.

For several months the arm was kept at an angle of about 120° and at rest in dressings of plaster of Paris, during which time the infiltration became less; but during a severe attack of la grippe the inflammation became acute, and the part afterward remained tender and painful. One injection of iodoform in glycerine was given; but the gentleman resolved to have an operation with a view of definitely ending the trouble.

Family history and personal habits and history good:

Incision was made with a view to excise the joint, but on inspection it was felt that there would be some uncertainty as to the result, whereas our instructions from the patient were that we must amputate if in doubt. Above it one third of the humerus was removed.

Inspection shows caries of the head of radius, of the olecranon process, and of the external epicondyle and periarticular thickening, extending for several inches above and below the joint. The

amount of disease is not extensive, and there would have been a fair chance of recovery with a good arm after excision.

CASE 2.—S. S. 16: Family history of tuberculosis. Has had chronic pleurisy, regarding which there is still doubt. Left knee swollen and stiff.

For several months a Thomas knee-splint was used, but the joint was not well cared for, and several falls occurred, doing considerable violence. Several places broke down and local curettage was done.

Amputation a little above joint of lower and middle third.

Inspection shows quite extensive rarefying osteitis extending down the tibia, but still more markedly up the femur. When amputating, the medullary canal was cleared out through its entire length, several long pieces of bone coming away also.

This case contrasts with the former in having marked taint in family history and in the more rapid destruction of tissues

CASE 3.—C. A. 38. Good family history. Injured knee about ten years ago. Always previous to that time was strong and healthy. Ever since then, has seemed to enjoy good health except that the knee never fully recovered.

Treatment during these years has been irregular and intermittent. The joint never got any satisfactory period of complete rest. Through frequently repeated small traumatisms, the knee has gradually grown worse. Larger than its fellow one inch. Expression of joint much hidden. Infiltration all about the joint.

May 12th, 1897. Excision. Found it impossible to remove diseased tissues thoroughly; but had not obtained permission to amputate.

Sept. 20th. Disease continued to progress, and amputation was performed at junction of middle and lower third to-day.

The bone is much softened and thinned for several inches both above and below the joint. Progress since amputation has been most satisfactory.

Statistics show that amputation is an important life-saving measure in tuberculous affections of the limbs. Even where other lesions have manifested themselves, as *e. g.* in the lungs, these latter generally improve in a very satisfactory manner.

Dr. Primrose referred to certain extraordinary effects produced by operative procedure on tuberculous disease. Thus Dr. McKenzie referred to the fact that a tuberculous focus in the lung may improve after removal of disease in one of the extremities. Some recent

observers have recorded the marked effect upon tuberculosis of the hip produced by amputation at the knee. The disease under such circumstances has been observed to become more localized and circumscribed so that subsequent amputation at the hip became feasible and was performed successfully.

Dr. Amyot remarked the absence of disease in the cancellous tissue, when surrounding it for almost the entire circumference of the bone, the disease was marked, also for about four inches the compact tissue was much eroded, and in spots very thin.

Mr. J. J. McKenzie presented a specimen of pericarditis in a heifer. From the history of the case the question of infectiousness had arisen, as a similar case had occurred some months before on the same farm.

The meeting then adjourned.

THE AMERICAN ELECTRO THERAPEUTIC ASSOCIATION.

THE seventh annual meeting of The American Electro Therapeutic Association was held at Harrisburg, Pa., in the Academy of Medicine, on September 21, 22 and 23, under the presidency of Dr. William T. Bishop, of Harrisburg, who called the meeting to order at 10 a.m. on Tuesday, September 21. The Rev. Leroy F. Baker, of St. Paul's P. E. church, offered an opening prayer, after which Mayor Patterson welcomed the delegates to the city. Dr. Robert Newman, of New York, a former president, responded in a very witty strain and took occasion to remark that electricity was not treated with the consideration it deserved in the medical colleges.

The privileges of the floor were extended to the many visiting physicians.

Dr. Margaret A. Cleaves, of New York, chairman of the Committee on Meters, presented her report. She drew attention to the fact that several makes of meter had been withdrawn permanently from the tests of the committee because of their demonstrated inefficiency, and that a new company had come into the field with a novel apparatus—a milleampere-meter and a volt-meter for use on alternating current circuits, both sinusoidal and the interrupted or faradic.

Dr. Robert Newman, of New York, read a paper on "Electric Treatment in Gout and Uric Acid Diathesis." From careful

observation and experience he could positively assert that gout and kindred diseases could be checked, relapses prevented, and in many cases a cure effected by the judicious application of electricity, particularly the static form. He cited himself as a case in point. The advantages of static electricity are that it is generally diffused through the body, penetrating deeply: it is a general tonic; the "breeze" generally allays the pain in a few minutes, and secures freedom of motion; headaches and mental confusion are dissipated, and the temperature and circulation equalized; the icy coldness of the feet relieved; nervous debility removed, the secretory and excretory organs stimulated, inflammatory products absorbed; it also gives passive exercise. Urinary analyses were presented verifying the claim for static electricity to abate gout.

Dr. Francis B. Bishop, of Washington, D.C., presented a paper on "Chorea." It was reasonable to believe that an unstable condition of the higher nerve centres predisposed to the condition, and that a poison affecting these centres might produce in one person epilepsy, in another general neurasthenia, and in a third chorea. In his section of the country malaria was largely responsible for chorea. Treatment consisted in attention to the bowels and diet, securing proper rest, and the use of static electricity by means of the "static cage," which, while gently stimulating the periphery, soothed the general nervous system; at the same time the patient is made to inhale the ozone, thus supplying oxygen to the impoverished blood.

"Sources of Atmospheric Electricity," by Dr. R. J. Nunn, of Savannah, Ga. He considered the solar system a vast static induction machine; the atmosphere close to the earth's surface must revolve with the earth as the latter turns upon its axis, while the tendency of that portion of the atmosphere at a distance from the earth's attraction is to accumulate behind the earth. At some point the atmospheric inertia must neutralize the earth's attraction, and where this occurred there must be friction, which would necessarily cause electrical phenomena; other factors were of importance, such as variation in pressure, temperature, humidity.

"Some Thoughts and Considerations on X Ray Work," by Dr. Eugene R. Corson, of Savannah, Ga. The author thought that the experiments on polarization and refraction had been conducted too close to the tube and that there might be a point at which they would come within the control of present methods. He thought that the X ray would prove even more valuable in dislocations than in fractures. He suggested that a careful outline tracing be

made of the negative by transmitted light, all extraneous light being shut off. The eye could much more readily pick out the essential features in such a tracing than from the usual print or radiograph. Radiographs were shown, proving that the X ray penetrated a deposit of urate of soda much more readily than it did bone. Many useful suggestions were made.

"Some Considerations Relative to the Therapeutic Application of the Current," by Dr. George E. Bill, Harrisburg, Pa. The writer threw out many suggestions as to the best methods of applying electricity, especially as to polarity.

"The Early Electrolysis of Nævus," by Dr. Charles R. Dickson, Toronto, Canada. Two cases were cited in support of the contention that nævus should be operated upon as early as possible, that the operation was much simpler, less prolonged, and the chances of scarring much less than when the operation was deferred until later in life.

"Heart Failure in Cardiac Diseases due to Defective Circulation," by Dr. Eli H. Coover, Harrisburg, Pa. Many suggestions as to appropriate treatment were made.

"Expenditure of Electrical Energy," by Dr. Margaret A. Cleaves, New York. In order to have an intelligent conception of the force by means of which electricity is made available, or of the laws governing its action, it was necessary to use a voltmeter as well as a milleamperemeter. In the treatment of an acute neuritis, or acute pelvic inflammation, the wise physician would employ the minimum rate of expenditure in volt-amperes; our purpose is to expend the energy in such a way as to exercise a directive influence upon the molecules and atoms, not to cause any disruptive action. In the treatment of a fibroid tumor, on the other hand, greater pressure would be required in order to overcome the resistance of the denser structures, in the conducting path; current density in its practical bearings was carefully gone into. Numerous tabulated clinical records were exhibited, containing the data mentioned in the paper.

"Molecular Effects of Electricity," by Professor Dolbear, of Tuft's College, Boston. The laws governing molecular motion were discussed in a masterly manner; physical laws are immutable, and the effects produced by what we call electricity are really due to heat.

"The New Electro-Mercuric Treatment of Cancer," by Dr. G. Betton Massey, Philadelphia, was a further elaboration of a paper presented to the American Medical Association in June, 1897. It was only applicable in cases where the general system had not yet been infected.

"Current Regulating Apparatus," by Mr. Edward Jewell, E.E., Chicago, described methods of controlling dynamo currents and adapting them to therapeutic work. Absolute protection could only be secured by using the "motor-dynamo," which was made by connecting together by insulated coupling the shafts of two one-eighth horse-power shunt motors, the winding on one of them having been reversed.

"Report of the Committee on Electrodes," Dr. Charles R. Dickson, Toronto, chairman. A binding post was presented, devised by one of the members, which could be used with any existing tips. The metric system of measurement was again recommended. On motion of Dr. Robert Newman the report was accepted, and on motion of Dr. John Gerin the Association accepted the metric system for all measurements.

"Galvinism as an Aid in the Treatment of Goitre," by Dr. Caleb Brown, Sac City, Ia. His cases ranged from twelve to fifty-six years of age, 33 per cent. being "hard" (a preponderance of connective tissue), and 67 per cent. "soft" (a predominance of fluid in the follicles or vascular tissue), every case of the first was benefitted, but none completely cured. By galvinism in fully 75 per cent. of recent cases of "soft" goitre occurring mostly in young women, the gland returned almost if not quite to its normal size, and had remained so in 25 per cent. of the cases. Mild currents, frequently repeated, was his rule.

"Further Studies of the Manifestations of Uric Acid, and their Treatment, Electrically and Otherwise," by Dr. J. Griffith Davis, New York. Special emphasis was laid on the statement that uric acid and its salts are the result or product of nerve and muscle waste. Among cases cited was one of very severe puerperal eclampsia followed by a most obstinate form of insomnia, which latter yielded finally most satisfactorily to general faradization. Among methods of prevention of the retention in the system of uric acid, the bicycle was lauded as a means of obtaining exercise in the fresh air; it was advised that the body be clothed in wool. For acute manifestations the writer preferred medicine, but for the more chronic forms had found the galvanic and faradic currents very useful.

"A New Electrode for Use with the Static Machine" was presented by Dr. Lucy Hall-Brown, New York, who sent a communication on the subject. An efficient spray current could be administered by means of a wire brush on a handle, consisting of about four hundred fine steel wires arranged like a small whisk.

Dr. Bergonie, of Bordeaux, France, sent three short communications, entitled :

(a) "A New Localizing Electrode to Prevent the Diffusion of the Current."

(b) "Palliative Treatment of Tic Douloureux of the face."

(c) "The Action of the Roentgen Rays on the Vitality and Virulence of Koch's Bacilli in Cultures."

These were translated and read by Dr. F. Schavoir, of Stamford, Conn.

The localizing electrode consisted of eight or ten narrow electrodes, connected alternately with the positive and negative poles. The current must have an extremely high intensity in order to become diffused.

In the treatment of tic douloureux, he uses a large electrode on the face, and an indifferent electrode to the dorsal region. A continuous current of 50 volts and 30 to 50 milleamperes is employed, and the periods of ascension and diminution last from seven to ten minutes. The maximum intensity should be maintained for at least twenty minutes. As the cases had been kept under observation for several years, he could say positively that the treatment always brought relief from intense pain, and sometimes after a considerable time caused its permanent disappearance.

The author described in detail the manner in which his investigations into the action of the Roentgen rays on the tubercle bacilli had been conducted, and concluded from his experiments that the exposure of the culture for one hour did not destroy the virulence of the culture, but retarded its evolution ; and, also, that the vitality of the cultures was not modified.

"Report of the Committee on Electric Light for Diagnosis and Therapy, and the Roentgen X-Rays," by Dr. F. Schavoir, Stamford, Conn. With the static machine the rays produced were far more penetrating and steady, and the radiographs could be taken with a much shorter exposure than by other means ; many and great improvements had been made in vacuum tubes, and that a marked increase in transparency had been secured in the fluoroscope by the substitution of barium platino-cyanide for the tungstate of calcium.

The President read his address which briefly reviewed the history of the Association, and suggested several changes which would increase the value and usefulness of the Association, and lessen the work of the executive. On motion of Dr. Charles R. Dickson, it was resolved, that the Executive Council be directed to consider the suggestions contained in the President's address, and also the mat-

ter of the revision of the constitution and by-laws ; that their report be mailed to the members at least one month prior to the next meeting, and that notice of such amendments is now given.

On motion of Dr. R. J. Nunn it was decided to hold the eighth annual meeting in the city of Buffalo, N.Y., and the second Tuesday in September and two following days were chosen as the date.

The following officers were elected for the ensuing year :

PRESIDENT.—Dr. Charles R. Dickson, of Toronto, Canada.

FIRST VICE-PRESIDENT.—Dr. F. Schavoir, of Stamford, Conn.

SECOND VICE-PRESIDENT.—Dr. Caleb Brown, of Sac City, Iowa.

SECRETARY.—Dr. John Gerin, of Auburn, N.Y.

TREASURER.—Dr. R. J. Nunn, of Savannah, Ga.

EXECUTIVE COUNCIL.

Dr. Robert Newman, of New York, N.Y.

Dr. W. J. Morton, of New York, N.Y.

Dr. W. J. Herdman, of Ann Arbor, Mich.

Dr. W. T. Bishop, of Harrisburg, Pa.

Dr. G. Betton Massey, of Philadelphia, Pa.

The customary votes of thanks were passed, after which the retiring President appointed Drs. Newman and Nunn a committee to conduct the newly elected President to the chair. Dr. Dickson, on receiving the gavel, addressed the meeting in a particularly happy vein, and requested the hearty co-operation of each member to make the meeting in Buffalo an unqualified success. He would announce his appointments of the committees on the investigation of scientific questions without unnecessary delay ; he declared the meeting adjourned, to re-convene at the call of the Executive Council.

Book Reviews.

SIMON'S CLINICAL DIAGNOSIS. New (2nd) edition, revised and enlarged. A manual of clinical diagnosis by microscopical and chemical methods. For students, hospital physicians, and practitioners. By Charles E. Simon, M.D., late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore. In one very handsome octavo volume of 530 pages, with 135 engravings and 14 full-page colored plates. Cloth, \$3.50. Lea Brothers, Philadelphia and New York.

That the first edition of this work is exhausted, and a second demanded within a year, is of sufficient import to stamp it as one of great value. Simon, in this second edition, has brought the material right up to date, and we are acquainted with no single work that is its equal. The style is free, the material presented in a concise, yet not too brief, manner. The examination of the secretions of the body are too often neglected. The chapter on examination of the urine is the most complete and advanced that we know of in the English language, and each of the departments is handled in the same thorough and scientific manner. The several chapters deal with the examination of the blood, secretions of the mouth, gastric juices, feces, nasal secretions, sputum, urine, etc. As an aid to clinical diagnosis we believe this volume indispensable to the progressive physician. The illustrations are well reproduced, while the typography is splendid.

TEXT-BOOK OF MEDICAL AND SURGICAL GYNÆCOLOGY. By R. W. Garrett, M.A., M.D., Professor of Obstetrics and Gynæcology in the Medical Faculty, Queen's University, Kingston; Gynæcologist to the Kingston General Hospital. J. A. Carveth & Co., medical publishers, Toronto. 400 pages.

The author in his preface sets out with the idea of placing his extended notes of lectures in the form of a text-book of such proportions as would not be cumbersome to the student and easily carried to and from class. He has carried this idea a little farther, and now presents to students and practitioners a neat volume of 400 pages, with over 100 illustrations, and indexed very much better than many of the larger and more pretentious works.

He has followed Garrigue's method of arrangement, believing that a regional classification is preferable to a pathological one, and divided the work into four parts. The *first* part is devoted to the principles of gynæcology and occupies one hundred pages. Under the heading gynæ-

cological therapeutics he gives the following wholesome advice, which might well be taken to heart by every student and general practitioner, and last, but not least, by the gynæcologist: "Thus the circulation and the digestive and other important systems may influence or be influenced by the pelvic organs, and when deciding upon a line of treatment, the general condition of the patient must never be lost sight of." Pelvic massage is discussed and described, and half a dozen pages devoted to post-operative treatment, a subject on which the average student is usually sadly deficient.

Part *two* deals with functional diseases, particularly the disorders of menstruation. We have never been an admirer of set prescriptions, and scarcely think it is in the best interest of the student that he be asked to fill his head with long formulæ rather than exercise his faculties and formulate his own prescriptions, giving to himself a reason for every ingredient which enters into the composition of them.

Part *three* treats of the special regions—the pelvic floor, vagina, urethra, bladder, uterus, ovaries, tubes, etc., all of which are illustrated so as to be understood by the average student. In future editions it would be well to look closely after the lettering of the illustrations. Some of them are confusing, not to say misleading.

Part *four* takes up diseases of the breast, and in a concise manner gives the latest recognized hints on the various subjects considered.

To the student the book will be of decided use.

A PRACTICAL TREATISE ON SEXUAL DISORDERS OF THE MALE AND FEMALE. By Robert W. Taylor, M.D., Clinical Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. In one handsome octavo volume of 448 pages, with 73 illustrations and eight plates in color and monochrome. Cloth, \$3, net. Lea Brothers & Co., New York and Philadelphia.

This is a very opportune time for the appearance of this valuable work. Dr. Taylor is recognized as an authority as well as a conscientious worker. The subject matter brings us face to face with a class of disorders that is of frequent occurrence and of which very little is known by the general practitioner. The symptoms are vague, often remote, and in a large percentage of cases, are attributed to that wonderful *neurasthenia* which strongly resembles Pandora's box. It has been the scapegoat for ignorance long enough. This work will do a great deal to remove this ignorance and enlighten us on a very important train of symptoms.

We do not intend to review chapter by chapter, and while we admire the work and the author, we believe there are omissions that should not be overlooked in the next edition. The male has altogether too much attention paid him. The ill-spoken of are, we believe, far more common in the female than this work admits. That small, though very important part of the female genitals, the clitoris, is ignored. This organ is a very fruitful source of irritation that results in serious nervous and

BOOK REVIEWS.

sexual disorders. It has a prepuce, smegma accumulates beneath it, and nervous and sexual disorders follow. This little organ should be more carefully studied as a result. This is the particular work that should refer to it. Then the chapters on "*New Growths and Hypertrophia of the Vulva*," "*Vegetation of the Vulva*," "*Hypertrophia of the Vulva due to Syphilis and Tuberculous Ulcers of the Vulva*," etc., are not sexual disorders, but pathological changes, due to conditions that are not purely sexual. These chapters are very interesting and instructive, but are more pertinent to a treatise on venereal disease than the present work.

We speak freely of the work because we recognize its immense value, also the need of the profession for such a volume. In no sense do we find fault with the contents, it is with the omissions. If space permitted we would say more good things. We strongly advise every practitioner to place the volume in his library and make a careful study of its contents. The illustrations are mostly new and original, while the typography, press work, and binding, are excellent.

GENITO-URINARY SURGERY AND VENEREAL DISEASES. By J. William White, M.D., Professor of Clinical Surgery, University of Pennsylvania, and Edward Martin, M.D., Clinical Professor of Genito-Urinary Diseases, University of Pennsylvania. 1065 pages. Illustrated with 243 engravings and 7 colored plates. Philadelphia: J. B. Lippincott Company. Dominion agent, Charles Roberts, 593a Cadieux street, Montreal.

It is a great pleasure to read this work. Its teachings are good. There are omissions which the authors provide for in the preface. "We have exercised the authors' right of choice in estimating the comparative value of various methods of treatment, etc." This, of course, detracts from the value of the work as one of reference, but it is eminently practical, and the omissions can be filled from the larger systems. Great care has been exercised in drawing attention to diagnosis and treatment, and these are the two great essentials. The patient has more interest in the successful treatment of his malady than in any pathological change. Yet the knowledge of the latter is imperative on good treatment. In discussing treatment of stricture of the urethra, however, certain methods are dismissed rather too abruptly. Electrolysis should hardly be dismissed in three lines, even if the authors do not approve of the procedure. Other good authorities do.

The chapters on the care of urethral instruments is a very timely one. The urethral instruments in the physician's office, especially the country practitioner, are usually thrown, rather than placed, in a drawer, and taken out and used when required. Catheters and sounds are rarely thoroughly cleansed. Soft instruments are rough. By carefully following the instructions in this chapter, the physician will save expense and the patient will run no risk of infection from imperfectly prepared instruments. It may seem a peculiar chapter to pick out and lay particular stress upon, but due knowledge of the carelessness in this particular line amongst otherwise careful surgeons is enough to show the great need of the teaching.

The treatment of syphilis is very thorough. The excision of the chancre is advocated not as heartily as some of us may wish, but in a much freer manner than was done a few years ago.

That secondary symptoms should be manifest before systematic treatment is begun we believe is the correct stand to take. The systemic abortive treatment when adopted as soon as a sore is seen, is wrong in principle, because many a sore, apparently specific, proves to be innocent. This would never be known if treatment had been adopted before the diagnosis was complete.

A typographical error on page 526 in the McDade formulæ may cause confusion. "Kappæ minoris" should read "lappæ minoris." The work is, on the whole, one that should be on the shelves of the general practitioner, and the student should make time to read from its pages. The diseases described are amongst those most commonly met with, notwithstanding which students are, as a rule, poorly informed on their diagnosis and treatment.

Books received :

SENN'S GENITO-URINARY TUBERCULOSIS. *Tuberculosis of the Genito-Urinary Apparatus, Male and Female.* By Nicholas Senn, M.D., Ph.D., LL.D., Professor of the Practice of Surgery and of Clinical Surgery, Rush Medical College, Chicago.

ANDERS' THEORY AND PRACTICE OF MEDICINE. *A Text-Book of the Theory and Practice of Medicine.* By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia.

MALLORY AND WRIGHT'S PATHOLOGICAL TECHNIQUE. *Pathological Technique.* By Frank B. Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard Medical School; Assistant Pathologist to the Boston City Hospital; and James H. Wright, A.M., M.D., Instructor in Pathology, Harvard Medical School; Pathologist to the Massachusetts General Hospital.

DISEASES OF WOMEN. By Henry J. Garrigues, A.M., M.D., Professor of Gynæcology and Obstetrics in the New York School of Clinical Medicine; Gynæcologist to St. Mark's Hospital and to the German Dispensary, New York City. One octavo volume of 728 pages, illustrated by 335 wood-cuts and colored plates. Second edition, thoroughly revised and enlarged. Prices: Cloth, \$4 net; half Morocco, \$5 net. Philadelphia: W. B. Saunders. Toronto: J. A. Carveth & Co.

A TEXT-BOOK ON PRACTICAL THERAPEUTICS, with especial reference to the application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, etc. With special chapters by Drs. George E. de Schweinitz, Edward Martin and Barton C. Hirst. Sixth edition, thoroughly revised and largely rewritten. In one octavo volume of 756 pages. Cloth, \$3.75; leather, \$4.75. Lea Brothers & Co., Publishers, Philadelphia and New York, 1897.

Medical Items.

THE Alvarenga Prize for 1897 has been awarded to Dr. Joseph Collins, of New York, for his essay entitled "Aphasia."

THE FATAL SPOT.—He—"You have broken my heart." She—"What of that? If I had struck your solar plexus you might have had something to complain of."—*Truth.*

CHOOSING AN EPITAPH.—Bereaved Widow—"I want something short and simple for my husband's tombstone." Dealer—"How do you like 'Resurgam?'" Bereaved Widow—"What does that mean?" Dealer—"I shall rise again." Bereaved Widow—"No; make it 'Rest in Peace.'"—*Truth.*

THE AMERICAN PEDIATRIC SOCIETY is making a Collective Investigation of Infantile Scurvy as occurring in North America, and earnestly requests the co-operation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any of the committee. A final printed report of the investigation will be sent to those furnishing cases.

[Signed]

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Committee.

OBITUARY.

ALEXANDER MILTON ROSS, M.A., M.D.—Dr. A. M. Ross died at the residence of his son, Dr. Norman G. Ross, Detroit, October 27th, aged 65. He was born at Belleville, and when a boy went to New York, where, after many reverses, he became a compositor on the *Evening Post*. He commenced to study medicine in 1851, and graduated in 1855. He was distinguished as a naturalist, and received honors from many countries. He only practised his profession to a limited extent, and was well known in Canada as a pronounced opponent to

vaccination. He lived in Toronto many years, but went to Detroit in 1896. Apoplexy is said to have been the cause of death.

HENRY JOSEPH MURPHY, M.D.—Dr. Murphy, of Chatham, died after a prolonged illness, November 3rd. He was educated in Buffalo, where he received the degree of M.D., in 1865, and Kingston, where he became Licentiate of the Royal College of Physicians and Surgeons in 1867. He had practised for a number of years in Chatham.

REV. WILLIAM CLARKE, LICENTIATE MEDICAL BOARD, UPPER CANADA.—The Rev. Dr. Clarke, of Bracebridge, Ontario, died at his late residence, November 11, 1897, aged 70. He was born in Chatham, N.S., and was educated in Halifax and Glasgow, Scotland. He taught English and classics in the old Grammar School, Toronto, and afterwards studied medicine in the Toronto School of Medicine, and received a license to practise from the Medical Board of Upper Canada in 1860. He was engaged in practice in Toronto for two years, and afterwards in Paris, Ontario, for twenty-two years. In 1885 he entered the ministry of the Presbyterian Church, and received a call to Bracebridge, where he had remained in active work until a short time before his death.

JOHN H. GARDINER, M.B.—We have to announce with deep regret the death of Dr. J. H. Gardiner, of London, which, we understand, was caused by septicæmia. He received his medical education in the Toronto School of Medicine, and the degree of M.B. from the University of Toronto in 1878. After graduating, he commenced practice in London, and continued in active work up to the time of his last illness. As a practitioner he was successful, and took an active interest in all things pertaining to his profession, being a good working member of many medical societies. He was present at the recent meetings of the Canadian and the British Medical Association, and attended faithfully many of the sections of the British meeting. He was also an ardent municipal politician, taking a special interest in public, educational and health questions. His death, which occurred November 1st, 1897, was deeply deplored by all classes of people in London and its vicinity.

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Original Communications.

TUMORS OF THE RECTUM.*

BY GEORGE BINGHAM, M.D.

GENTLEMEN,—The specimen which I have to show you to-night is one of malignant adenoma of the rectum. I believe the specimen will possess for you some intrinsic interest of its own, and meanwhile it will serve in part as a text for a few remarks upon tumors of the rectum. This wide subject I shall not attempt to exhaust, but shall merely indicate the more common, benign and malignant neoplasms to be found in the large intestine, and more particularly in the rectum, pointing out the distinctive pathological characteristics of each.

Owing to the fact that a peduncle is a characteristic common to most benign growths in the lower bowel, the term rectal polypus has been used in a manner altogether too indiscriminate, from a

*Read before the Pathological Society of Toronto.

pathological point of view ; and while it is, perhaps, as well to retain the term, yet one should not lose sight of the fact that it is used to designate varied pathological processes.

1. Of benign neoplasms in this locality the most commonly met with is the adenoma or mucous polypus. This growth, most frequently met with in children, consists in a hypertrophy of the glandular structure of the intestine. In its formation Lieberkuhn's crypts become much enlarged and elongated, and the columnar cells lining them greatly increased in numbers, thus producing a projection upon the mucous surface. This gradually increases in size until it interferes somewhat with the passage of fæces, which forces the tumor downward, making tension upon its mucous attachment until a pedicle is formed, which consists of mucous membrane and the blood-vessels and lymphatics of supply. These polypoid growths, which are single or multiple, vary in size from that of a pea to that of a hen's egg, or even larger.

The lobulated surface of the mass is reddish in color, unless nipped by the sphincters when it becomes livid. So far the neoplastic process has been quite superficial, and there has been no tendency to pass beyond the basement membrane, nor to invade the deeper tissues with new glandular and cell elements. Nor is there any tendency toward metastasis. Under the microscope there is still a regularity of arrangement in the cells and follicles in marked contrast to the irregular and haphazard deposition of the new tissue in a malignant growth.

2. Fibroma of the rectum or fibroid polypus, though not so common as the adenoma, yet appears to be a pretty constant accompaniment to long-standing internal piles, and to anal fissure. It consists essentially in an increased connected tissue formation, superficial in character and covered by the mucous membrane, which is usually dragged down to form a pedicle.

3. Papilloma, or villous polypus of the rectum, is a rare disease, though a similar growth in the bladder is frequently met with. In the rectum it consists in a projecting mass of mucous papillæ covered by columnar epithelium. The pedicle in this case is usually broad ; indeed, the growth is sometimes sessile. The peculiar warty appearance is fairly characteristic. It is largely confined to adult life, and tends to bleed freely when examined, in addition to secreting mucus abundantly.

4. Muroid cystoma, and

5. Dermoid of the rectum are rare, and their pathological characteristics too well known to be considered.

6. Lipoma of the rectum is a rare form of benign tumor, originating in the submucous or subperitoneal fat, and, according to Thomas, incapable of giving rise to malignant disease unless first converted into fibroma or myoma.

7. Other forms of benign growths, such as angioma, lymphoma, myoma, chondroma, are seldom met with in the rectum or large intestine.

It is to be noted that there are certain characteristics common to the group of benign tumors of the rectum and serving to differentiate them from the malignant growths about to be considered. These features of the benign tumor are :

- (1) The pedicle.
- (2) No invasion of the deeper tissues.
- (3) No tendency to break down *per se*; ulceration or sloughing usually caused by mechanical pressure.
- (4) No metastasis.
- (5) A tendency to encapsulation.
- (6) No constitutional effects.
- (7) No tendency to return when removed.
- (8) Of the malignant neoplasms of the rectum the one most commonly met with is

(1) Adeno-carcinoma or malignant adenoma. It is sometimes the result of cell changes in the benign growth and may develop primarily from the lymphatic tissue of the bowel. Under the microscope the constituent parts of benign and malignant adenoma are seen to be practically identical. The difference appears to be in the arrangement of the cells and follicles and their relations to surrounding tissues. In adenoma the new elements are circumscribed and often encapsuled, not extending beyond the basement membrane, while the essential characteristic of the carcinoma is the irregularity in the arrangement of the new elements and their invasion of the deeper tissues. While the benign growth tends to invade the lumen of the bowels while attached to its wall by a pedicle, the tendency of the carcinoma is to remain sessile, invading the deeper structures of the bowel wall. This is well shown in the specimen presented to-night. The surface of the carcinoma tends to break down and ulcers appear upon its surface, sometimes very early in the disease. A catarrhal condition of the bowel above the new growth leads to a mucous diarrhœa which, after a time, is not controlled by the invaded sphincter. The glandular cavities of the growth become distended with mucoid material, leading to degenerative changes in the deeper tissues; and at the same time there is an increase in the

interglandular fibrous tissues (Esmarch). As the malignant process is frequently engrafted upon a benign polypoid growth it follows that the carcinoma has sometimes a distinct pedicle. Yet this is not the rule. The malignant process is usually a primary one, and the resulting mass is sessile, tending to invade the structures beyond the muscularis mucosa. Frequently the whole circumference of the bowel is invaded by a ring of the new tissue, leading to obstruction and a catarrhal condition of the bowel above the seat of invasion. This is true of the specimen presented. While a sero-saneous discharge is always present in these cases, yet hæmorrhage to any extent has not been noticed in the cases I have seen.

The disease when once established progresses rapidly and owing to the irritation to which the parts are subjected, inflammatory and necrotic changes are soon apparent. Neighboring organs, such as the prostate, often become involved early and add to the suffering. The vitality of the patient is undermined, the cachexia is established and rapid destruction of health ensues. Metastasis does not usually occur in the early stages. The pelvic and lumbar glands and those about the efferent vessels of the rectum become progressively affected, sometimes becoming so large as to be detected, on palpation, through the abdominal wall; and next the liver is invaded. Later, the spleen, kidneys, lungs and peritoneum may become the habitat of secondary foci. The disease is rare in early life, but comparatively frequent after middle age.

(2) Colloid carcinoma, in which the cancer cells have undergone colloid change, is rarely found in the rectum. It assumes the form of a distinct translucent mass projecting into the bowel lumen, or else a diffuse invasion of the bowel wall. The jelly-like appearance of the growth is characteristic.

(3) Sarcoma is also rarely found in the rectum. Made up of embryonic connective tissue, it sometimes presents an enormous lobulated tumor, filling the lumen of the bowel, or else an elongated stricture of the bowel is produced by a conversion of almost the entire thickness of the bowel wall into the new tissue.

The differential diagnosis of carcinoma of the rectum is to the clinician exceedingly important. Benign growth, tubercle, syphilis, and traumatism may each simulate the more grave condition, but the use of the microscope will, as a rule, serve to elucidate the matter. At the bedside, too, the careful observer will find many differential points as to history, gross appearance, and progress of the disease; but, as this is not a clinical society, I refrain from further reference to this point.

The specimen which I present is from the rectum of a young man æt. 23, who died September 23 last. The mass was under observation about 2½ months, the patient and parent refusing operation. Another operation for an intercurrent affection was rendered necessary, and to this he submitted. The patient first applied for relief owing to a condition of obstruction of the bowel, and *did not* complain of pain, with the exception of some irritation upon defæcation. Marked anæmia developed, the result of progressive auto-intoxication; disturbances of the heart and stomach ensued, and he died apparently of exhaustion.

Slight enlargement of the mesenteric glands was noted *post mortem*. The solitary glands of the large intestine were enlarged, and had several small ulcers on the follicles. The liver was soft and friable, otherwise normal. There was marked cloudy swelling of the kidney, and the cortex was thickened. There was chronic thickening of a segment of the mitral valve. Walls of the stomach thickened and glands prominent. The other organs normal, with the exception of the lungs, in which some emphysema was noted. Cultures from the peritoneum were sterile; those from the heart's blood showed *B. communis coli*.

SOME CONSIDERATIONS IN THE MANAGEMENT OF PREGNANCY.*

BY DR. E. E. HARVEY,
NORWICH.

TO the general practitioner a knowledge of how to successfully treat the various and peculiar ailments of pregnancy is of the greatest importance. The curse of Eve, in the closing years of this present century, seems to have descended upon woman-kind with unique ferocity, and the storehouses of medical knowledge are often drawn upon to the utmost extent without affording that relief which an agonized motherhood has every reason to expect. It is said of John Hunter that he divided all diseases into three classes, those sulphur would cure, those mercury would cure, and those the devil himself couldn't cure. It would seem from the indifference with which many practitioners regard the ailments of pregnancy, that they would relegate these to the latter class.

There is no doubt that our system of education is directly responsible for very much of the pain suffered by pregnant women, especially primipara. Young girls, while passing through the period of puberty,—that period in which a mighty revolution, mental, physical, and physiological, is effected; that period in which the greatest care should be taken, and the most complete rest and freedom from nervous worry ensured, are forced, in our schools, to undue mental activity and physical inactivity. A more complete system for the deterioration of the female sex could scarcely be devised. The school-room air, too often impure, favors anæmia: the sedentary habits of the pupil cause a lack of muscular development: while the excessive stimulation of the nervous system results in an over-development of nervous tissue in the body. The ganglia are hypersensitive, and, as it were, constantly in a state of unstable equilibrium. Insufficient clothing induces colds and consequent pelvic inflammations. The waste products are not thoroughly eliminated, but remain to further weaken the system.

*Read before the Ontario Medical Association, Toronto, June, 1897.

The beginning of menstruation in such girls, even without membranous dysmenorrhœa, may be attended with severe pain, the uterine congestion stretching the hypersensitive nerves and ganglia. And, when the *affliction* of pregnancy—for such in her case it is—overtakes her, the accumulated misery resulting from the violation of half-a-hundred hygienic laws, called (by courtesy) *civilization*, descends upon her undeserving head.

The fecundated ovum, in healthy women, imparts to the generative organs in particular and to the whole system in general a distinct and peculiar increase in nutritive activity. The assimilative powers of every organ and tissue are increased. This is true, indeed, of every case. We are often astonished that pregnant women can remain comparatively well and strong, and yet retain so little food. Her increased assimilative power is the explanation. What she does retain is used to the very best advantage. But in women who, in girlhood school-life, have had their muscles under developed and their nerves over-developed, the changes induced in the uterus and surrounding structures are often attended with extreme distress. This is greatly increased by anæmia. It is, of course, impossible to speak with absolute accuracy in attempting to describe the differences in the process of gradual enlargement in pregnancy in a healthy and an unhealthy uterus, but it would appear to be somewhat as follows : The increase in the size and structural elements of the muscular and nervous tissues, instead of proceeding *pari passu*, as they ought to do, proceed in such a manner that the muscular fibres are left smaller, weaker, and less developed in every way, while the nervous ganglia are larger and more highly sensitive. This disproportion is doubtless the cause of much of the pain, especially in the later months, when the pressure of the expanding ovum causes the uterine structures to stretch. When actually brought to labor the "pains" are grinding but ineffectual. The weak uterus soon tires out. The labor is prolonged, agonizing, exhausting. The natural powers proving ineffectual, instrumental interference is necessary to complete deliverance and save the lives of mother and child.

ABDOMINAL PAINS.

These are of three varieties, arising from as many sources. When from the womb they begin shortly after conception. They occur principally in the anæmic and the neurasthenic. First there are a few darting pains, occurring irregularly, followed by a general soreness, and a feeling as though a weight were bearing heavily on the lower pelvic structures. As the womb continues to expand these

abnormal symptoms are succeeded by crampy pains, sometimes light, oftener quite severe, and becoming more severe as time goes on. I have seen those pains so severe, in the later months of pregnancy, that the patient could not rest in any position,—could scarcely sit up or walk at all. Each succeeding day brought only agony and the prospect of increased agony.

When these uterine pains arise from the remains of an old metritis or parametritis, the administration of the bromides, especially bromide of sodium, with *fld. ext. hydrastis Canadensis*, is indicated, and should be given in full doses. Ergot, if employed at all, should be carefully given, lest a miscarriage be induced. Much may be done, also, by depletion with tampons of glycerine, or glycerine and solid *ext. bellad. rad.* introduced behind the cervix, or to either side as indicated. It has been frequently noticed that the pregnancy itself seems to have a resolvent action upon the inflammatory exudation which causes adhesions between the womb and neighboring structures, much of it, apparently, being absorbed. To increase this absorption, alteratives, as mercury and the iodides, should be used.

Women suffering from endocervicitis are unlikely to conceive, but when they do, the usual treatment in such cases, if carefully performed, is followed by very satisfactory results. The cervix may be depleted by glycerine tampons introduced not into, but up to it. Use the blunt curette gently, and follow it up by swabbing on Churchill's iodine, or iodine and carbolic acid for some distance up the cervix. But the douche, either hot water or medicated solution, should never be employed, as it is almost sure, sooner or later, to bring on a miscarriage.

In the other class of cases, where no results of an old inflammation can be discovered, the pains being neuralgic in character, in women who are anæmic or neurasthenic—weak and hypersensitive, where the nervous system is overdeveloped and over sensitive, and the muscular system weak, the treatment varies according to the conditions found. In many, simple anæmia is the cause, and the cure the administration of iron and other hæmatenics. But what I have found of most benefit in these cases is the *helonias* compound of Parke, Davis & Co.—a mixture of the fluid extracts of *helonias*, *Mitchella repens*, *viburnum opulus* and *caulophyllum*. I have had cases in which it acted like a charm. It has not only a distinctly sedative action on the uterus, but also a decidedly tonic effect. Under its administration the pains and soreness gradually disappeared, the uterus becoming strong and healthy, and the patient brighter and more cheerful.

I have noticed, also, that in women who have taken the helonias compound for some weeks or months before confinement, the labor has invariably been quick and easy, the uterine contractions being strong and regular, although previous labor had been tedious, agonizing, and exhausting, from severe but inefficient "pains." From what I have observed I believe it to be a specific uterine tonic and sedative, the latter possibly depending upon the former effect. I have been in the habit of administering it in from 30 m. to 40 m. doses four times daily. For these patients it has seemed to me much superior to liquor sedans (P.D.&Co.). I have used both in the same patient, and found the helonias compound answer every purpose much better.

When the abdominal distress comes from a chronic ovaritis, the pains are more severe, and the probability of relief less. Something may be done by ovarian sedatives; something by glycerine and belladonna tampons placed as near the inflamed ovary as possible; but the patient will have to depend largely on rest, plenty of fresh air, and suitable diet. There is a possibility of surgical interference being necessary.

When the pains come from the stretching of the abdominal walls—the muscles and fasciæ, I have invariably seen relief given by the vigorous application of a liniment of aconite, belladonna, opium and camphor, supplemented with heat. Possibly the hot-water bag answers the purpose best. And when, from the stretching, the skin is sore and neuralgic, I use a mixture of olive oil three parts, and F.E. opii camphorated one part, which, rubbed in night and morning, not only relieves the distress but allows the skin to stretch without tearing.

RESTLESSNESS.

Many women, while pregnant, suffer very much from restlessness and sleeplessness. They are hot and nervous, worried and fretful over the most trifling matters. If they are thus distressed during the night they cannot sleep, but toss from side to side hour after hour. Such a patient will get up during the night—possibly many times, and walk around the house or about the yard trying to get cool and quiet, or read by the hour in an effort to get her attention from herself. Her limbs and back ache and pain; her head feels sore and throbs painfully; her whole body is tired—yet she cannot sleep. She feels as though she would like to scream to relieve herself. She is depressed and anxious, a prey to foolish terrors. Any recent grief is accentuated; any old sorrow revived. The almost infinite possibilities of deformity in her child are considered in agon-

izing detail ; it seems impossible to rid herself of such thoughts. If she could only get sleep, she feels, all would be well.

If these attacks occur during the day, they are less severe ; for the daylight, and the company, and the many things happening to distract her attention from herself, serve to lessen her foolish fears, and induce a more normal train of thought.

In discussing the management of such cases I might say, first, that it is important that the physician know something of the domestic and social life of such a patient—her griefs, her joys, her domestic and social ties, her mentality. If the cause can be found in any of these and removed, a lot of drugging will be saved. While it is important that the physician study carefully the mentality and domestic life of every patient, it is specially so in these cases—he can treat them much more intelligently and efficiently.

Fresh air is of the greatest value. She should be out of doors, riding or walking, as much as possible. Her bedroom windows should be opened at night,—there is little danger of catching cold. With this should be combined active exercise. The poorer woman will get enough of both at her ordinary work, if it be housework and takes her in and out of doors constantly. The richer must depend on driving and walking, and these she should do constantly. Oxygen and exercise serve to keep the body free from all effete matters, the deleterious waste products of the system, and to ensure healthy growth and renewal of the tissues. They hasten both the elimination of the poisons, and the regeneration of the physical structures.

She should keep cool. The majority of pregnant women are too hot constantly—(the accentuated chemical action, in the body, being the cause)—and from this suffer greatly. She should wear loose and light clothing, sleep under light covers, with a hard pillow, in as large a room as possible, with open window. The food should be light, easily digested, and nutritious without being rich. Much meat, rich gravies and sauces, and pastry, should be avoided, especially in the evening.

I have seen great benefit derived from cool bathing, especially the cool sitz-bath. She should sit in the cool water from two to ten minutes every evening, gradually increasing the time, giving herself a vigorous rubbing when getting out of it. It seems to take the achy, tired feeling out of the back, hips and legs, better than anything else. Great relief is also afforded by frequently washing the face, neck and arms in cold water, and drinking cold drinks.

Usually these measures will leave her in such a cool and healthy state that she will have no trouble in going to sleep ; but, if in spite

of these she should continue sleepless, I would advise sulfonal in 10gr. or 15gr. doses half an hour before bedtime. The powder should be dissolved in a little hot water, and given in half a cup of hot milk. Sulfonal, in these cases, has proved more efficient and certain in its action than any other hypnotic I have used. In small doses it never has any bad after effects, but in larger doses—e.g.—3ss., is apt, next day, to leave the patient with a bad headache.

One of the main objects in all treatment in pregnancy is to ensure, if possible, an easy and a relatively speedy delivery. It is impossible that a woman should not suffer at all, but it is possible to so care for her that her labor will be robbed of all danger, and of much—indeed nearly all—of the pain. I am speaking now of ordinary patients, not of those with deformed pelves. And this can be done mainly by judicious dieting.

I am well aware that Dr. Gilman Thompson, in his "Practical Dietetics", teaches that nothing can be done in this direction, but my experience has been directly the opposite, and so distinctly that I now make it a point to give every patient careful and explicit directions with regard to her diet.

Some years ago I noticed that the women who ate heartily of bread, strong meats, and other strong foods, usually had painful and tedious labors, the child's head being hard and unmouldable, and the pelvic tissues and structures stiff and unyielding. On the contrary, those of the poorer class, who ate coarser food with little meat and plenty of fruits and relaxing vegetables, had much easier confinements. From this I concluded that diet had a good deal to do with the quality of the confinement. Now, I strongly advise my patients to abstain from the richer foods, bread, strong meats, spices, and much table salt, and to live, instead, on the lighter grains, fruits, and vegetables. Such a patient should eat rice, sago, and tapioca; green vegetables—as lettuce, spinach, asparagus, rhubarb, celery, cauliflower, etc.; other roots and vegetables—turnips, onions, parsnips, potatoes; fruits of all kinds—apples, cherries, plums, peaches, pears, and the various kinds of berries; and oatmeal porridge. She should drink weak tea and coffee: spring water is all the better for being boiled. Lemons, oranges and grapes should be eaten frequently. In this Province apples are cheap and plentiful, and are the very best thing a pregnant woman can eat. I remember the experience of one patient in particular. During her first pregnancy they were very poor, and all she had to eat a great part of the time were apples and potatoes. Her labor was very easy, though she was a primipara, and the child was large. During her next pregnancy they

were in better circumstances, and she ate heartily of strong foods. That labor was severe and tedious, though the child was smaller.

I would also advise each patient during the last eight weeks, at least, of her pregnancy, to take each day a dessert spoonful of whole flax-seed, washed well and boiled in half a pint of water. The seed and gelatinous liquor must both be drunk, and it is more palatable taken hot with a little lemon-juice stirred in. This not only has a laxative effect on the bowels—one of the most important things in pregnancy, but also a peculiar relaxing effect on all the pelvic tissues. It will undoubtedly render any labor much easier and more speedy. If the fruit diet is not sufficient to keep the bowels relaxed, I use pulv. glycyrr. co. or Wampole's Laxative Compound, and consider these the best laxatives for pregnancy.

As I have mentioned, with patients, in whose previous labors the uterine contractions were weak, seldom, and inefficient, I have used the helonias compound (P. D. & Co.'s) with splendid results. I have not used this latter in a sufficient number of cases to justify me in asserting that it will invariably have this result, but in all cases in which I have used it the results have been gratifying.

THE PATHOLOGY OF BALDNESS AND ITS RELATION TO SEBORRHŒA.

BY DR. PEPLER.

IN considering the pathological changes found in baldness, let us look first to the hair. We find it stunted in its growth, being shorter, and atrophied, particularly towards the bulbar extremity, giving them a club shape, sometimes splitting and fibrillation of shaft, showing dilatations in places. The shaft breaks at these dilated points and leaves a stumpy hair with a brush-like extremity.

On examining a section of the skin from a patch of alopecia in an early stage, we see signs of a recent inflammation almost entirely confined to the corium and papillary layers. There is a perivascular infiltration of small round cells in circumscribed areas. The blood vessels and lymph channels are dilated and filled with a fibrous coagula. The rete and epithelium are unchanged—follicles generally empty or containing downy hairs. In some cases the papilla is lost, and the epidermal cells that go to form the hairs are packed up some distance in the follicles and devoid of pigment, and a small, undeveloped hair starting higher up. When this process has gone on some time, there is a great thickening of the walls of the vessels and much narrowing of lumen, with a general atrophy of all the tissues. As to what causes these pathological conditions, there is a great difference of opinion. There are those who tell us that it is tropho-neurotic, others that it is parasitic in origin.

There have been quite a number of cases recorded by Leloir and others where nervous exhaustion, blows on the head, worry, or sudden shock to the nervous system has caused a baldness in patches.

Max Joseph removed the spinal ganglia of the second cervical nerves in cats and observed falling out of the hair in patches in the region supplied by the nerve injured.

Very little was known of the parasitic origin until Gruby, in 1843, described a parasite which he found mixed with the epithelial cells and in the interior of the hairs, grouped in bundles, the hairs being

dilated in places. He called it *Microsporon Audouini*. This parasite he considered to be the cause of alopecia. Bazin took up the parasitic theory and demonstrated similar parasites. After this comes a long period of nearly forty years, in which the parasitic theory was disregarded. Tibrury Fox, in his work dated 1877, describes alopecia as due to a want of nerve force or tone, making no mention of organisms. Louis H. Duhring, in his "Diseases of the Skin," 1882, is most emphatic in his unbelief of any parasitic origin. He says alopecia is a non-parasitic disease and not contagious, but beyond doubt a functional nerve disturbance causing impaired nutrition.

Taylor & Morrow in their treatises on the skin give a more detailed account of the organism found in alopecia.

In a French dictionary, dated 1855, the word alopecia is defined by the words fox evil and scurf—scurf being derived from the Swedish *skorpa*, a crust—thus showing the connection between alopecia and a disease where crusts were formed. It was Hebra who first called attention to the close relationship between alopecia and seborrhœa, but he thought seborrhœa was an imperfect metamorphosis of the cells of sebaceous glands. Unna opposed this functional theory, and showed it to be an inflammatory process and a stage of a form of parasitic dermatitis, which he called *eczema seborrhoicum*. Such writers as Besnier, Doyon and Vidal concur in the opinion of Unna.

Ziemson in his handbook, 1885, opposes the Hebra theory that seborrhœa is a primary condition of alopecia. He considers seborrhœa based on an abnormal constitution or local nutrient condition, an anomaly of the hair formation—he says they are parallel effects of the same cause. In 1881, Thin had a paper read by Prof. Huxley, before the Royal Society, entitled "On *Bacterium decalvans*, an organism associated with the destruction of the hair in Alopecia Areata." Thin found round and elongated bodies, usually in pairs with the long axis of each forming a continuous line, sometimes three, end to end, all in one sheath, with the hair split into shreds. He thought the bacteria grew down between the inner root sheath and the shaft, penetrating the hair substance at the root, and as they multiplied they ascended in the substance of the hair. The splitting of the hair was attributed to the products of the growing organisms. Thin took a small piece of skin from a patch of alopecia areata, stained it in gentian violet, and on examination found the hair follicle dilated in its upper part above the entrance of the duct, and in this sac were many well-stained micro-organisms. They

were not present in the outer root sheath, nor in the surrounding connective tissue. The hair and stumps stained in gentian violet by Gram-Wiegert's method showed them split up and twisted, between the fragments the bacilli were found multiplying inside the hair and in the follicles, disorganizing the tissues thereabout. Hairs that are split up like this, by the growth of a bacillus, must die.

Robinson, in his bacteriological investigations in 1887, found the blood vessels and lymph channels packed with organisms in pairs, colonies and rows.

Dr. Elliott investigated 207 cases of alopecia—of these 179 were due to seborrhœa, and he noticed that when the local symptoms ceased so did the alopecia. After very careful and prolonged examinations of several cases he sums up as follows :

- (1) Constitutional conditions cause a certain number of cases.
- (2) The majority are attributed to local processes.
- (3) All the local diseases are stages of eczema seborrhoicum of Unna.
- (4) From the lowest to highest grade the pathology was degrees of inflammation extending sometimes through the cutis, and as a result hyperformation of horny epidermis.
- (5) Sebaceous glands were unchanged.
- (6) Source of the squamæ is the hyperplastic epidermis ; not from the sebaceous glands.

In a further study of alopecia by Elliott and Merrill 344 cases were examined—of these 316 were proved to be of local origin. The bacteriological experiments with eczema seborrhoicum were very interesting. Forty-eight out of fifty cases showed germ life ; two sterile. They divided the organisms into three varieties :

- (1) Small diplococcus, single or in irregular groups. Each slightly oval, ærobic, non-liquefying, non-chromogenic, growing rapidly at 70° F.
- (2) Small diplococcus, more oval, ærobic, non-liquefying chromogenic.
- (3) Bacillus, with rounded ends, single or in pairs ; short or long chains, ærobic and anærobic ; motile, liquefying, non-chromogenic.

The probabilities that were deduced from their experiments were : that eczema seborrhoicum is caused by a specific germ or germs ; that this is a diplococcus or diplococci ; that the yellow stain often seen in the eruption is due to the chromogenic faculty of the germ ; that the prevalence of the disease is due to the ability of the germ to grow in ordinary temperature of the varying seasons.

Dr. Elliott says of the report in the two cases, that were sterile,

resorcin had been used. He cultivated the organisms found on various media, and obtained each in a state of pure culture. Inoculating with these pure cultures he got lesions characteristic of the disease in two, singly and together, and from these lesions he obtained pure cultures of the germs. Only seven out of twelve inoculations were successful. All successful inoculations on the scalp were accompanied by alopecia on the affected area. He obtained lesions on sternum from those on scalp, and what was interesting, he noticed that when No. 1 variety (non-chromogenic diplococcus) was inoculated he got dry, white, pityriasic scales. When No. 2 was used (chromogenic diplococcus) yellowish, greasy scales appeared. If Nos. 1 and 2 were used, greasy, crumbly, yellowish crusts formed, showing the disease to change according to the diplococcus used.

In February, 1897, a most interesting and exhaustive article appeared in the *Annals de l'Institute Pasteur* by Sabourard, on recherches into the relations between seborrhœa, alopecia areata, and baldness. He devoted one whole year to this special subject, examining thirty-two sections of skin. He has shown us that the bacillus of cultures from alopecia areata is also present in the seborrhœic plugs, and that consequently seborrhœa and alopecia areata have a common micro-organism. He has shown us the exact position of the bacillus (viz., the upper part of the hair sac), and that the toxin of the bacillus of seborrhœic plugs has a distinct and exclusive action on the papillæ of cutaneous hairs, but the mechanism of which he does not explain. He began by showing that alopecia areata started from a central spot and spread along its circumference, and that the most pathologically active zone was at the outside of the patch. Here the hairs were broken and club-shaped, the microbes were found in the upper part of the hair sac, and on squeezing out the sebum, or, as he calls it, the "seborrhœic cocoon," from the follicles he found large numbers of different organisms in its substance. Then he separated out from these the bacillus of alopecia areata by means of a medium composed of peptone, glycerine, acetic acid water, and gelose, which destroyed all the organisms except the bacillus of alopecia areata, and a white coccus that was very persistent, and which, he thought, played some part in the cause of alopecia areata. (This white coccus seems to be identical with the white staphylococcus found by Dr. Welch in his bacteriological experiments on the skin, and which he called staphylococcus epidermidis albus. Dr. Welch regards it as being nearly a constant habitant of the skin, having obtained it in pure culture in thirty-three cases out of forty-four examined.)

Sabourard got rid of this white coccus by slow sterilization 65° C. for ten minutes, and also by using immunized gelose.

Towards proving this bacillus to be the cause of alopecia areata, Sabourard has produced baldness in rabbits by inoculating them with it (but he is not altogether satisfied with the results). Sabourard has shown the connection between seborrhœa and alopecia by first finding the bacillus of alopecia areata present in the seborrhœic plugs of the mouths of the hairs and sebaceous follicles in seborrhœa. Having a common origin, he came to the conclusion that the seborrhœa was the prelude of baldness. The pathological process is as follows: There is an afflux of wandering cells; the papilla atrophies and produces a hair devoid of pigment, which dies, and is expelled. Hairs once shed are never renewed. The sebum, laden with microbes, infects the follicles, one by one, till there is complete baldness. The microbes remain in the upper part of the follicle. How the papilla of the hair becomes involved remains to be proved, but Sabourard has gone a long way towards explaining this by inoculating the muscular tissues of a rabbit with a filtrate of a cultivation on liquid medium. This produced in three or four days shedding of fur, and in forty days general alopecia, thus showing that the toxin of the bacillus of seborrhœic plugs produces its action on the papillæ of the cutaneous hairs, even when inoculated into the heart of the system.

There is still left to prove that this bacillus under violent circumstances rapidly causes an alopecia areata, or more gradually brings about a baldness in ten or twenty years.

The bacillus when young is almost round, less than 1 micro-millimeter in length; the fully grown ones measure 1 micro-millimeter in length and 0.5 micro-millimeter in diameter. They stain well in gentian violet by Gram's method, or in borax-methylene blue solution, and faintly in hæmatoxylin; found often singly, sometimes in pairs, rarely in threes or fours. There seems to be a general concurrence of opinion as to the character of the bacillus found. The fact that this bacillus is not always seen in the same place does not in any way disprove the fact of its being the cause of the baldness.

That alopecia is contagious has been proved beyond a doubt. Hillier quotes forty-three cases of alopecia in a parish school, at the same time, traced to one child. M. Leon Cohn cites twenty cases in a French regiment during one month, and seventy-seven cases during the epidemic. These cases spread from the barber's brushes. I have seen three cases, in one house, at the same time, no doubt

due to using the same brush. The fact of these bacilli being found deep in the tissues would account for alopecia not being more contagious, and also for the difficulty of treatment.

Where baldness comes on suddenly, from apparent tropho-neurotic influence, it would be interesting to take sections of the skin and examine for the bacillus as a predisposing cause. In ten cases of premature baldness, where I have made examination, I have found a pathologically typical seborrhœa present, and am therefore inclined to think that the micro-organism that causes the seborrhœa can, by travelling in the lymph channels and blood-vessels, produce a gradual and general baldness.

I hope at a future meeting of this society to present specimens showing the pathological changes in alopecia and seborrhœa, and to also demonstrate the micro-organism present in both diseases.

THE RELATION OF CHRONIC ENDOMETRITIS TO EARLY RUPTURE OF THE MEMBRANES IN LABOR.

BY MORLEY CURRIE, B.A., M.B.

PICTON.

IN this article early rupture of the membranes as a result of abnormal development and abnormal adhesions of the membranes, arising from chronic endometritis, will first be discussed. An analysis of cases pointing to a connection between endometritis and early rupture of the membranes will then be given.

The nutrition and development of the membranes depends largely, in the first three months of foetal life, upon the decidua reflexa, in the last six months upon the united decidua reflexa and decidua vera. A chronic endometritis means an abnormal decidua, and an abnormal decidua means mal-nutrition and faulty development of the membranes. It is evident, without going more minutely into this part of the subject, that a chronic endometritis is a cause of the development of membranes either more thin or more friable than those developed in a healthy uterus. Hence it is to be expected that forces, which would have no effect on membranes developed in a healthy uterus, will cause early rupture of membranes developed in a uterus which is the seat of a chronic endometritis.

Chronic endometritis is also a cause of early rupture of the membranes by reason of the adhesions which it forms between the membranes and the uterine walls. Cases of labor, otherwise normal, are occasionally encountered in which the os persistently refuses to dilate and in which an examination reveals the presence of strong adhesions between the membranes and that portion of the uterus surrounding the internal os. The breaking down of the adhesions is followed by normal dilatation of the os. In these cases a history of chronic endometritis is common. Here it is evident that the forces tending to dilate the os are engaged in producing a state of tension in the membranes covering the os. The rarity of these cases is to be explained by the early rupture of the membranes in most cases in which these adhesions occur.

The following analysis is based on the observation of twenty-six cases of early rupture of the membrane in full-term vertex presentations. Cases occurring with excessively strong pains, abnormal presentations and contracted pelves are excluded from this series. Hence the early rupture is not to be explained by excessive pressure on the membranes.

In nineteen of the cases a satisfactory history of chronic endometritis was obtained. Of the seven cases in which no history of endometritis was obtained, two were primiparæ.

In sixteen of the cases an ante-partum examination had been made. In twelve of these cases a note of "lacerated cervix" had been made on the ante-partum sheet. This note was never made unless the laceration was marked. These twelve cases all gave a history of endometritis.

In eight cases there was a history of previous treatment for uterine disease.

Questioning the multiparæ as to the early or late rupture of the membranes in other labors did not furnish any very satisfactory information, as might be expected. However, some seemed pretty sure that rupture of the membranes had occurred a very short time before delivery in labors antedating the endometritis, and some gave a history pointing to early rupture ever since the appearance of the endometritis.

PERSISTENT FORAMEN OVALE.*

By R. D. RUDOLF, M.D. EDIN.

TORONTO.

MR. PRESIDENT AND GENTLEMEN,—The specimen which I would present to you is one of persistent foramen ovale and ductus arteriosus. The history of the case is briefly as follows: The patient was a male child, born normally at full term. At birth great cyanosis of the skin and mucous membranes was noticed by the nurse who attended the confinement. Some two hours later, when I, for the first time, saw the child, he was found to be a fairly grown, but poorly nourished infant, with an unusual amount of lanugo on the back and limbs. The face and extremities were very blue in color. The breathing was fairly rapid and labored on inspiration, the lower costal zone sucking in markedly, or to be more exact, failing to expand synchronously with the rest of the chest. No cause of obstruction could be detected in the upper air passages. Gradually the breathing improved, and the chest expanded more normally, and in a couple of days the child lost the constant cyanosis and became of almost, if not quite, normal color, but every few hours, without any apparent cause, attacks of cyanosis would appear, and these persisted until his death when 11 days old. Death was due to diarrhoea and asthenia, the child never assimilating his food properly, and the mother refusing to nurse him.

The physical signs scarcely come within the scope of these notes, but I may say that I detected no abnormality on auscultation before birth, the foetal heart sounds being clear. Nor after birth could I detect any bruits, but the rhythm was frequently irregular and the rate very high.

At the *post mortem* examination, some forty hours after death, Dr. Boyd kindly assisting me, *post mortem* rigidity was absent and decomposition commencing. The body was emaciated and the lips blue. The lungs appeared normal and were fully expanded, pieces, even of small size, floating lightly in water.

*Read before the Pathological Society of Toronto.

The heart was of about normal size as a whole, but the right side was abnormally developed at the expense of the left. It contained a little fluid blood. The right auricle was dilated to quite twice the size of the left, and its walls were somewhat thicker. On the auricular septum was seen a large foramen ovale, which occupied quite half of the septum. It easily admitted a lead pencil. The persistence of the foramen was evidently due to either a shrinking or a want of development of the flap, which normally should close it, and this flap only reached about half way across it. The right ventricle was as capacious as the left, and its walls were fully as thick. The pulmonary artery was large and nowhere stenosed, and after giving off a right and left branch to the lungs became slightly constricted, this constriction representing the ductus arteriosus and then continued on into, and as, the aorta. The aorta itself, on leaving the left ventricle, was small, and after giving off branches to the head and neck and upper extremities joined the continuation of the pulmonary artery, i.e., the ductus arteriosus, its orifice not being half the diameter of the vessel it joined. The ventricular septum was complete. In this heart the right ventricle, besides supplying blood to the lungs, must have pumped more blood into the aorta than was provided by the left ventricle. In fact, the foetal condition of the ductus arteriosus had continued after birth.

Referring for a moment to the development of the heart, we know that early in foetal life the auricles are represented by a single cavity, and that about the eighth week a septum begins to grow backwards from the anterior wall and finally reaches the posterior. The lower part, however, does not attain so far, and the hiatus thus left forms the foramen ovale. About the same time a fold starts from the posterior wall and grows forwards to the left of the other one, and by the sixth month has reached and passed the anterior margin of the foramen ovale, thus forming a flap which will freely permit of the passage of fluid from right to left, but will prevent any flow from left to right. This valve exists during the last three or four months of foetal life, but towards the end of this period gradually becomes adherent to the margins of the foramen from behind forwards, and after birth, when the relative blood pressure in the two auricles alters, then the rest of the flap adheres. Thus the foramen ovale is closed and the fossa ovalis is formed. The complete closure, however, does not take place till a variable time after birth, and not uncommonly a slight patency remains even into adult life, without affecting the nutrition of the individual. In a bullock's heart, taken from an adult and very well nourished animal, I found an opening which would have admitted a lead pencil.

As regards the object of the foramen ovale : in the fœtus all the blood entering the right auricle from inferior vena cava, which includes all the blood coming from the placenta, passes through the foramen into the left auricle. From the fact that the flow is from right to left, we know that the pressure in the right auricle is greater than in the left in fœtal life, but if from any cause during the later months this condition should be for the moment reversed, then the valve at the foramen would prevent any regurgitation. The comparatively pure blood thus supplied to the left auricle passes into the left ventricle and thence to the upper part of the body. Some blood must pass on in the aorta, and, mixing with the more or less impure flow coming from the right ventricle through the ductus arteriosus, passes to the rest of the body. How distinct, however, the blood supply of the upper part of the body is from that of the lower is well shown by a case mentioned in Henoch's "Pædiatrics," in which, in a fully-grown and nourished child which was born dead, a complete septum was found in that part of the aorta lying between the left subclavian artery and the ductus arteriosus. In this case the blood for the head and neck and upper limbs was entirely pumped by the left ventricle, while the rest of the body was supplied by the right ventricle, and yet nutrition was perfect.

After birth the pressure in the left auricle becomes as great or greater than that in the right, and hence the valve of the foramen ovale closes, and sooner or later becomes adherent to the margins of the foramen. Any want of adhesion merely cannot allow of regurgitation from left to right, and hence when such occurs, it means that the valve either from want of development or from disease is incompetent.

A patent foramen ovale then, allowing of regurgitation, implies not merely a persistence of the adult fœtal condition, but the presence of an abnormality dating farther back in fœtal life, or else of disease causing the valve, *after* proper development, to shrink.

Symptoms. Frequently none are present even when a markedly incompetent foramen ovale exists, and this is true of all malformations of the heart. Henoch mentions a case where a child was admitted, suffering from pneumonia, with no cyanosis or abnormality of the heart to be detected. She died, and on *post mortem* examination (besides pneumonia) considerable malformations of the heart were found. The ventricles communicated with one another by a large aperture, the tricuspid valve was wanting and the mitral was inserted into an extremity of the right side of the heart.

But frequently in congenital heart affections there is more or

less cyanosis—as in the case before us—and the question is what is the cause of this. Wm. Hunter ascribed it to the admixture of venous and arterial bloods, and this view was endorsed by Gintrac, and is commonly taught to the present day, and the following is quoted from “Quain’s Anatomy”: “In certain instances there is such a failure of the union of the valve of the foramen ovale as to allow of the continued passage of venous blood, especially when the circulation is disturbed by any exertion, from the right to the left auricle as occurs in the malformation attending the morbus cæruleus. Morgagni, on the other hand in 1761, in describing the case of a girl who was suffering from cyanosis depending upon a patent foramen ovale, expressed the opinion that the blueness was probably due to venous congestion, and this view has been endorsed by Louis, and later by Peacock in “Quain’s Dictionary of Medicine.” The latter writes as follows: “It has been very fully shown that there is no just or constant relation between the intensity of the cyanosis and the amount of admixture, and, indeed, that very marked cyanosis may exist without any admixture, while on the other hand in all cases of marked cyanosis there are present causes capable of producing great venous congestion.”

Of these two theories, (1) intermixture, (2) venous congestion, I would hold with the latter. Supposing for a moment that the blueness *were* due to admixture, then we must assume that a stream of blood is passing from right to left through the foramen ovale, and that therefore the blood pressure in the right auricle is greater than in the left. If this were the case then nearly all children would be more or less cyanosed during the first few days or weeks of independent existence. Further, even a very considerable admixture of venous blood with the arterial has been shown abundantly not to produce cyanosis. Hensch mentions a case where the left subclavian artery arose from the pulmonary artery and yet the left arm and finger tips showed no cyanosis.

Blueness of the mucous membrane suggests to the clinician’s mind some insufficient action of the right side of the heart, either a weakness or a relative one in relation to the pressure it has to work against. We can understand readily how any of the ordinary congenital deformities may impede the action of this side of the organ. For example, persistence of the ductus arteriosus will raise the blood pressure in the pulmonary artery to somewhere near that in the aorta, and hence the right ventricle will have to work against an abnormal *vis à fronte*. Equally a stenosed pulmonary artery will increase the anterior resistance. In the same manner an imperfectly

guarded foramen ovale will permit of the higher pressure in the left auricle being transmitted to the right. All these causes will increase the work which the right side of the heart has to do, but as long as compensation here is fully maintained (or when it is *above*, as in the present case), then no cyanosis will occur. But when the least extra strain is thrown on the heart as by exertion, or if the compensation breaks down, then venous stasis will occur and cyanosis appear as one of its signs.

In the case presented to you the chief cause of the cyanosis, I think, was the patent ductus arteriosus. At first there was collapse (or a want of expansion of the bases of the lungs), and this would obstruct the pulmonary circulation, and, further, the struggle for breath threw still more strain on the right heart. After the lungs expanded fully and the breathing became easier, none of the extra work was taken from the right ventricle, and hence it attained compensation for the still extra work of pumping against the aortic pressure, and, therefore, the cyanosis almost disappeared.

The pressure in the right auricle being abnormally high, owing to the congested ventricle ahead, would probably cause a flow of blood from it through the foramen ovale, and hence some mixture of blood in the left side of the heart would ensue. But, as before seen, such an admixture is not of itself capable of producing cyanosis to any extent, and hence I believe that this condition in the present case was due to venous congestion.

I must apologize for having lengthened these notes by the introduction of many elementary and well-known facts in anatomy and physiology, only pleading as an extenuating circumstance that they were to some extent necessary as props for my conclusions.

EXPERIENCE OF TWO HUNDRED AND FORTY-EIGHT CASES OF ABDOMINAL SURGERY.*

BY A. LAPHORN SMITH, B.A., M.D., M.R.C.S. ENG.,

Fellow of the American Gynecological Society; Professor of Clinical Gynecology,
Bishop's University; Gynecologist to the Montreal Dispensary; Surgeon in
Chief of the Samaritan Hospital, and Surgeon to the Western
Hospital, Montreal.

FROM January, 1890, to November, 1897, he had opened the abdomen 248 times, with seventeen deaths, or a mortality of $6\frac{3}{4}$ per cent. for the whole eight years. In 1892 he had lost two out of twelve operations, or nearly 17 per cent.; but in 1895 he had lost two out of fifty-seven, or a mortality of only $3\frac{1}{2}$ per cent. In 1896 his death rate had been low, losing only two out of sixty, or a little over 3 per cent. Ninety-three of these operations were performed at his private hospital, seventy-nine at the Samaritan, sixty-six at the Western, and the remainder at private houses and other hospitals. The death rate at the Samaritan for laparotomies was 5 per cent., and for the same at the Western $6\frac{1}{2}$ per cent. Many of the operations were of the most serious nature, such as two of removal of large tumors of the kidney, without a death; eleven large ovarian tumors with two deaths; fourteen abdominal hysterectomies with four deaths; nine ventral and umbilical hernias without a death; sixty-two for double pus tubes with five deaths and ninety-nine ventrofixations with one death, which, however, had nothing to do with the ventrofixation as it occurred in a bad pus tube case. He referred to the charge sometimes brought against gynecologists that they often operated unnecessarily. This certainly could not be said in his case, as he had complete notes of 4,300 cases, besides many others which he had seen in consultation with other doctors, and out of these he had only opened the abdomen 248 times. He felt sure that there were at least as many more who would have been greatly benefited by such an operation, and who were, on the contrary, dragging out a miserable existence while under palliative treatment. He had, at least, a hundred women

*Abstract of paper read before the Medico-Chirurgical Society of Montreal, Dec. 12, 1897.

under local treatment for diseased tubes who were having recurring attacks of pelvic peritonitis at intervals of from three months to two years, and most of these women would, he believed, eventually decide to have the cause of their sufferings removed. He found that this delay greatly increased the difficulties of the operation. If these tubo-ovarian abscesses were allowed to break into the rectum, bladder, or vagina, they became very dangerous to life. He had been called in consultation to a lady at Halifax in which this had occurred and the patient died from hectic fever, being too far gone for operation. He had also a great many cases of cirrhotic ovaries under his care, and these women, he believed, suffered much more than was generally supposed. Many of them begged him to remove their ovaries, but it was his custom to decline to do so until they had first been treated for one year by other means. He thought that he had been too conservative, as many of these sufferers had reproached him for keeping them in misery so long when the operation was followed by immediate relief. In some of the greatest sufferers from chronic ovaritis, the ovaries were so small that they could hardly be felt, and yet the day after their removal the patients claimed that they were entirely free from the pain from which they had suffered for years. In eight years he had only opened the abdomen thirty-six times for diseased ovaries and had lost only one of them. In about two dozen cases he had left the ovaries in after cutting out cysts and removing tubes. His experience, however, of conservative surgery of diseased ovaries was, on the whole, unsatisfactory ; all the women, with two or three exceptions, reproached him for not having removed both ovaries completely. He thought that he would be more radical in future for the patient's and his own sake. It was a mistake to believe that women were never really well after ovaries had been removed ; in the majority of cases the operation has completely restored them to health. Among the most interesting cases was one of obstruction of the bowels ten days after removal of very adherent tubes and ovaries. The abdomen was reopened nine hours after fœcal vomiting had begun, and the intestine was found kinked and adherent ; it was detached and straightened out, and the patient recovered. He considered the management of tubal pregnancy was one of the most brilliant advances in abdominal surgery. He reported a group of seven cases, all of whom recovered. They had all been sufferers for years from tubal disease, and two of them had been urged to have their tubes removed several years previously. In four of the cases the diagnosis had been correctly made and the other three

were mistaken for pus tubes. In two of the cases a live child was floating about in the intestines, and in the third it was lying in the ruptured tube. In these three cases there were from one to three quarts of blood in the abdomen. The symptoms in these seven cases were not exactly the same as those described in the text-books. Most of these women had had their periods regularly, but in all the breasts were enlarged. He thought that when we have these three symptoms—enlarged breasts, irregular flow, and a painful rapidly enlarging mass in one side of the pelvis—we might suspect tubal pregnancy. If this is followed by an attack of syncope we might almost be sure of it, and should lose no time in operating, thereby saving the case. He thought that it was a disastrous policy to let them alone. Some of the nine cases of ventral and umbilical hernia were exceedingly difficult, it being necessary in several cases to leave at least one layer of the abdominal wall on the bowels which were adherent to the sac. They were nearly all closed with buried silk-worm gut sutures, which were left in. Although he had had a few cases of hernia following his early operations, during the past three or four years he had not had a case; this was owing, he thought, to leaving in the sutures for one month, a plan which he was the first to advocate. Since he has had the Trendelenburg posture he did not use drainage, either glass, rubber or gauze, because they were unnecessary. He took great care to have the bowels well prepared, so that they were rarely seen during the operation, and never handled. He was a firm believer in the value of flushing or washing every coil of intestine with salt solution; and he usually left from one quart to two gallons of it in the abdominal cavity to prevent adhesions and to satisfy thirst as well as to wash out the kidneys, as it was rapidly absorbed, strengthening the pulse and preventing the distressing aching all over the body. In emptying very large tumors he always left about two gallons of salt solution to support the abdominal veins. He never used iodoform, because of its smell, its cost and danger of poisoning—several cases of fatal poisoning having been reported here and elsewhere. He used nothing for disinfecting except permanganate, oxalic and bichloride, consequently there was no hospital odor. In eight cases the vermiform appendix was firmly adherent to the right tube. He laid great stress on the method of removing the appendix even with the cæcum, and then closing the hole in the bowel as you would a bullet hole, with two rows of Lembert suture, instead of leaving a stump. He knew of several cases in the practice of other surgeons in which the leaving of a stump had caused a troublesome fistula. He hoped that this suggestion would be generally adopted by those who were doing this life-saving operation more often than he, and he offered it as a small contribution towards the improvement of the technique of the operation.

MASSAGE.

BY THOMAS J. R. COOK, MASSEUR,

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NOTES ON ITS HISTORY AND APPLICATION TO DISEASE.

MASSAGE is a treatment which has been used for centuries, the Greeks and Romans used it in a primitive form after the bath, or after the struggles of the circus to dissipate the resulting contusions and extravasations and to restore pliability to the bruised and stiffened joints.

Among the Chinese written allusions will be found dating back to a period three thousand years before the Christian era, and their oral traditions are of still greater antiquity.

The Chinese manuscript Kong Fan, the date of which is 3,000 B.C., seems to have contained detailed accounts of these operations.

Much useful information respecting its early history will be found in the works of Hippocrates, Celsus, Galen, Oribase, Cælius Amelianus, and other writers, both ancient and modern.

Lomi, lomi of the Sandwich Islanders is described as a luxurious and healthful form of passive motion bestowed by the Hawaiians as a crowning act of gracious hospitality on the honored guest, or distinguished stranger.

During the early part of this century there is reason to believe that true massage was practised in France, but it was carried on secretly, and the professors of the art were but little inclined to impart their knowledge to casual enquirers.

It is to Dr. Metzger, of Amsterdam, that we are indebted for much of our knowledge of the modern phase of massage. He commenced studying the subject in 1853 and practised it constantly since 1861.

It is to the painstaking observation of Professor Von Mosengeil, that we are indebted for an accurate and scientific knowledge of the subject. His experiments on rabbits have served to place the whole question on a firm basis, which will not be readily shaken. In this country, unfortunately, very little is known about massage. The

massage given by most so-called masseurs and nurses is not massage at all. As much misconception still exists on the subject, it may be well to point out the differences between massage and the so-called massage given by charlatans. Massage is a scientific method of treating disease by systematic manipulation.

The individual muscle or groups of muscles are picked out or isolated, and stimulated to contraction mechanically. The movements must be made in the direction of the muscle fibres, and the tips of the fingers must be carried along in the interstitia, so as to promote the flow of lymph and increase tissue metamorphosis.

In addition an attempt should be made to stimulate mechanically the various motor points, in order that the muscles may be made to contract by a stimulus conveyed along their nerves.

The manipulations are carried out systematically in definite order and with a definite object. With the so-called massage (given by charlatans) these conditions which are essential to massage are considered to be of no importance, and the operator simply rubs or pummels the patient without any regard to the anatomical arrangement of the parts, and usually without any very definite object.

To perform massage a knowledge of anatomy is essential, whilst for rubbing and shampooing, physical strength and endurance with a certain *knack* are all that are necessary.

Shampooing is very useful in its way when applied in the Turkish bath, but it is not massage, and can never take the place of massage.

There is as much difference between massage and shampooing as there is between playing a difficult piece of music and striking the keys of the pianoforte at random.

I quite agree with Dr. Benjamin Lee, who, in speaking of the choice of a manipulator, says: "He or she (for both sexes may succeed admirably as masseurs or masseuses) must possess firstly, vigorous health; secondly, muscular strength; thirdly, a cheerful temperament, a pleasing face, and an acceptable manner; fourthly, a soft and pliant but strong hand; fifthly, a good education and a certain amount of refinement; sixthly, a knowledge of the leading facts of anatomy, such as the position of the various organs, the position and course of the larger arteries, veins, and nerves, and of such facts in physiology as the functions of the various organs, the course of the circulation, and the general processes of nutrition; seventhly, and lastly, an acquaintance with the effects produced by the different forms of manipulation, the order in which these different forms should be employed to produce certain general effects, the

injury which may be inflicted by employing them improperly or out of their proper order, and a practical dexterity in their application to be attained only by training under an experienced instructor." Hence it will be understood that we cannot take John from the stable, or Biddy from the wash-tub, and in one easy lesson convert either into a safe, reliable, or efficient manipulator.

Massage is an art, and as such must be acquired by study and patient practice under competent guidance.

The necessity for obtaining educated people to perform massage is as yet hardly recognized in this country. For those leading a sedentary life massage should be taken ; it accelerates the circulation, exercises the muscles without the slightest fatigue, the patient feeling rested and soothed ; it calms the "nervous system," and allays the excessive irritability and sense of tension from which so many business men are suffering to-day.

Many cases of nervous prostration could be avoided by taking the treatment.

The value of massage as a therapeutic agent extends over a wide area of disease, and the following points denote some of its special qualifications. It is useful :

To relieve pain in its wearing, wearying and agonizing forms.

To remove morbid matter and specific poisons from the blood, such as we know to be engendered by malaria, and such as give rise to gout, rheumatic gout, suppressed gout, etc.

To give tone to the nervous system, and to the heart and pulse, and to restore power, energy, efficiency, and capacity to disabled, exhausted, palsied, incompetent, and impotent parts.

To promote a healthy quality of blood and animal fluids.

To remove congestions, and insure functional activity of glands, skin, and mucous membrane.

To promote, maintain, and equalize the heat of the body.

To promote nutrition.

Dry massage is preferred for the following reasons :

You get better contraction of the muscles, and consequently a greater flow of lymph ; electrical currents are more readily developed in the tissues ; there is a greater elevation of temperature in the part ; massage is much easier for the operator when oil is used but not as beneficial to the patient—a very objectional feature about the oil is the soiling of the clothes.

There is not the slightest fear of causing abrasion of the skin in dry massage if the operator knows his work. The rubber who rubbed a hole in his patient because there was no vaseline had mistaken his vocation.

I do not deny that inunctions are of value in suitable cases, but that is entirely another matter, and has nothing to do with massage.

Massage is highly recommended for neurasthenia, paralysis, rheumatism, lumbago, rheumatic gout, Bright's disease, liver troubles, constipation, insomnia, locomotor ataxia, hysteria, joint affections, knee troubles, fractures, sprains, strains, bad circulation, alcoholism, chloral tipping, etc., etc., etc.

Massage is a most valuable therapeutic agent, and will yield good results in many complaints other than those I have roughly indicated.

Massage is a valuable therapeutic agent in connection with medicine and electricity.

OBSTETRICS

IN CHARGE OF

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AND

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ASSISTED BY

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THE TREATMENT OF PUERPERAL ENDOMETRITIS BY THE CAROSSA METHOD.

Dr. Edward J. Ill comments as follows on a pamphlet which appeared early in the winter of 1896, entitled "Eine neue Methode der Behandlung des Kindbett-Fiebers durchschlagendster Wirkung," by K. Carossa.

He says that with all its fantastic theory, there appeared a grain of truth and practicability in it, which led him to its trial in cases of puerperal fever.

Although the method looks much like permanent irrigation, it is by no means such. The author of the method describes it thus :

A catheter is introduced into the uterus and this organ filled with absorbent gauze, in a loose but thorough fashion. At the external end of this catheter a funnel is attached. Through this funnel a 20 to 25 volume per cent. of alcohol solution is poured so as to flow into the gauze, with which the uterus is filled. The quantity to be used is from thirty to fifty c.cm. every hour, day and night.

Carossa's theory is that, owing to the high temperature, some of the alcohol will evaporate and bedew the whole lining membrane of the organ with an alcohol solution no longer containing 25 per cent. alcohol, but about 53 per cent., thus getting a very appreciable disinfecting quantity of the alcohol.

It is to the production of alcohol dew that Dr. Carossa mainly ascribes the excellent results of the method employed. Of course,

if such a thing took place there would be, by constant evaporation, a production of high per cent. alcohol, and constant return flow of diluted alcohol from the mucous membrane of the uterus.

The way Dr. Ill has used it in five cases is thus: He first cleanses the uterus in the usual way by curetage and irrigation, and then introduces into the uterus an ordinary, small-size, soft rubber stomach-tube with an open end and a funnel attachment. This tube he takes of the usual length as used for lavage of the stomach. Near the funnel end there should be a clamp screw. The uterus and vagina are loosely but completely filled with iodoform gauze, the patient lying on her back and the perineum retracted with the speculum.

He now pours a twenty-five per cent. solution of ninety-five per cent. alcohol in water to the amount of 60 c.cm. into the funnel, and, by slightly opening the clamp, allows the fluid to flow slowly, so that the smarting of the alcohol will not be felt by the patient too severely. As soon as the last part of the solution reaches the clamp, this should be closed down and the tube will remain filled so that a new instalment of the solution will not carry too large a quantity of air with it.

The addition of 60 c.cm. is done once in two hours. It will be easily understood how any attendant may carry out these simple instructions. The gauze is changed not oftener than once in three days, and may be left six days. This would depend somewhat upon the febrile condition of the patient. He has used the method five times with entire satisfaction.

WHICH IS THE PREFERABLE OPERATIVE METHOD OF HOLDING THE UTERUS IN POSITION?

Herman E. Hayd, Buffalo, has great faith in ventral fixation for many conditions, but especially for prolapsus uteri et vaginae, or procidentia uteri. He also employs it in cases of coeliotomy for tubal and ovarian disease where the uterus has a tendency to tip or fall backward. He sews the uterus to the abdominal wall with chromicized catgut, not even scarifying the peritoneal covering of the uterus. He holds the organ by thin sutures, simply taking in the peritoneum and connective tissue over it, except where the organ is very heavy, when he includes the rectal fascia and muscles.

C. C. Frederick, Buffalo, has discontinued ventrofixation in women liable to bear children. He prefers Alexander's operation, or some of its modifications, in women who have borne children.

Women who have never been pregnant are likely to have poorly developed round ligaments that are apt to tear away from the anchoring sutures. In these he opens the abdomen and shortens the round ligaments, preferably by Mann's method.

Charles A. T. Reed, Cincinnati, once thought ventrofixation had a practical field of application in cases of decensus uteri in the early degrees, but having operated—and operation resulting in failure—he has discarded it. He does not think it wise or rational practice to establish one pathological condition for the relief of another, particularly where the secondary pathological condition is more painful than the one for which we operate.

J. Henry Carstens, Detroit, believes many cases of retroversion can be easily remedied by pessaries—particularly those cases of retroversion occurring shortly after confinement.

Willis G. Macdonald, Albany, thinks ventrofixation for procidentia uteri is not a failure. It is *the* operation for certain cases, particularly in women beyond the child-bearing period.

Rufus B. Hall, Cincinnati, thinks there are many objections to ventrofixation. For prolapse, as long as the silver sutures remain in place the uterus will stay. Many cases get complications or post-operation sequelæ which are serious in character. He thinks the operation has had its day. On one or two occasions he had to operate to undo a ventrofixation, two of them being intestinal obstruction.

X. O. Werder, Pittsburg. There are cases of displaced uteri, small, without complications, without endometritis, which require no treatment, especially displaced uteri in single girls. There are cases in which endometritis is the main complication, and produces all the symptoms, and if it is treated and the displacement let alone, the patient can be invariably cured. Pessaries may be required in other cases—judgment is always required.

Albert Goldspohn, Chicago. Great relief is obtained in rectifying the retroversion. The round ligament is the most serviceable structure available for correcting the displacement.

James F. Baldwin, Columbus, believes ventrofixation has come to stay. Unfortunately, like many other operations, it had been taken up in the way of a fad by the gynæcological part of the profession, but in some cases it serves an excellent purpose. He had done the operation about forty times, and had no failures following it.

M. Rosenwasser, Cleveland, finds very little use for so many operative measures. When he finds a heavy uterus after confine-

ment he sees that it is reduced in size. He uses tampons early, and then adjusts a pessary. He does not do a ventrofixation more than half a dozen times a year.—Abstracted from *Am. Jour. Obs.*

THE VALUE OF QUININE AS AN OXYTOXIC.

Dr. H. A. Hare, Philadelphia, has lately carried out a collective investigation among a considerable number of prominent obstetricians. From this investigation it is evident that quinine has no direct influence upon the uterus, but greatly increases its power of contraction by supporting the nervous system and also the general strength of the patient. It was shown that the drug is incapable of originating uterine contractions, and various explanations of the fact that abortions have occurred while quinine was administered were presented. It is apparently not as popular a remedy for uterine inertia as it was some years ago. Some observers reported that not only were a few cinchonised but that quinine distinctly increased the tendency to post partum hæmorrhage.

Dr. J. M. Baldy discarded it as an absolutely worthless drug in uterine inertia some years ago. It throws additional work on an already irritated stomach. He thinks it has been handed down as an heirloom from the past. He has yet to see the first case in which it has had any effect in increasing uterine pains after they have been established, or in originating pains.

Dr. Richard C. Norris does not believe that quinine has any direct oxytotoxic influence. He thinks it is simply a general tonic to the system in the same way that a man who needs stimulants, and takes quinine, is better than if he had not taken it. He prefers kolers, and as far as his investigations have gone, they would indicate apparently definite and very prompt results. But of all drugs, he prefers the administration of some general stimulant, such as a glass of whiskey and water or sherry.

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF

PRICE-BROWN, M.D.,

Laryngologist to Western Hospital; Laryngologist to Protestant Orphans' Home.

PATHOLOGICAL ANATOMY OF HYPERTROPHIED MUCOUS MEMBRANE.

Polyak, of Buda Pesth (*Archiv fur Laryngologie und Rhinologie*, Band vi., Heft 1), throws new light upon the pathological structure of nasal polypi and mucous membrane hypertrophies. The following are some of his conclusions:

"In hypertrophied nasal mucous membrane, including polypus and Hopmann's soft papilloma, homogeneous globules are found in the connective tissue, their number being proportionate to the cells. In most of these bodies the atrophied nucleus is recognizable, proving that the globules originate from cells undergoing degeneration. The retrograde changes begin by the cell swelling and the protoplasm becoming dark and flaky. Subsequently, the flakes increase in size, becoming rounded and shining. The cell, which is now considerably enlarged and spherical, assumes a raspberry-like appearance. The small globules then unite to form several larger flakes; the atrophied nucleus is usually still visible. Finally, perfectly homogeneous, round or oval formations result.

"In the epithelial layer, in large round cavities which have been produced by the pushing apart of the epithelial cells, the following structures occur: (a) Collections of white blood corpuscles with fragments of nuclei. (b) Homogeneous spherical structures, identical with those described as occurring in the connective tissue layer. (c) Scattered migratory cells, and abundant fatty granular cells, proving anew that the latter possess the power of movement.

"In the homogeneous structures, enclosed in the cavities of the epithelium, the atrophied nucleus is still frequently visible. Sometimes, however, when they are composed of several smaller globules, the nucleus appears in the middle as an irregularly compressed body. The author has not observed the initial stages of degeneration in the epithelia.

"Distinct transition forms are seen only in the round cells of the infiltration. The homogeneous structures appear whenever an infiltration of round cells is present; but they are always absent when the tissue is fibrous and poor in cells.

"The homogeneous bodies consist of a colloid substance—at least they react to stains, concentrated acids and alkalies, exactly as the colloid of the thyroid gland. At first they are made up probably of a more plastic material, so that larger flakes can arise by the closer packing and confluence of the smaller spheres.

"It may be assumed with a good deal of certainty, that the presence of cells in the hypertrophied nasal mucous membrane, which have undergone hyaline and colloid degeneration, is not accidental, but is closely connected with the want of tendency of these hypertrophies to undergo spontaneous resolution."

CONTRIBUTIONS TO OLFACTOMETRY.

Ludwika Goldsweig (*Archiv für Laryng. und Rhinol.*, Band vi., Heft. 1), in investigating this subject, used an instrument resembling Zwaardemaker's olfactometer to arrive at a quantitative estimate of the sense of smell. The substances used were iodoform, oil of sandalwood, and artificial musk, after mixing each with litharge and glycerine to form firm masses. The authoress proved that the power of olfaction was blunted during an attack of fever, just as hearing and vision were likewise diminished. This was particularly noticed during high febrile action. So also, febrile action being higher in the evening than the morning, the olfaction was at that time lower.

The effect of the application of cocain upon the sense of smell was also examined. A ten per cent. solution was applied, and then iodoform, musk, and sandalwood tried in turn, and the time noted when a change in perception occurred. It was found that in each case, though sometimes irregularly, the sense of smell was diminished.

Prolonged smelling of an odorous substance will also blunt and even, for the time being, destroy the sense of smell.

The purely qualitative condition of olfaction was also tested by comparing the power of smelling different substances, such as iodoform, menthol, cinnamon oil, etc., and as a result of the investigations, it was believed that olfactometry should be recommended as an aid to diagnosis.

MUCOUS CYSTS OF MAXILLARY SINUS.

Alexander (*Archiv fur Laryng. und Rhinol.*, Band vi., Heft 1), records six cases in which he diagnosed a cystic condition of the lining mucosa of the antrum, by making exploratory puncture and aspirating serous fluid. The author also reviews the history of eighteen other cases which have been published. The symptoms produced by the presence of cysts are not distinctive, inasmuch as the headache or frontal pressure which may be present, may equally be produced by other causes. Transillumination gives little if any assistance, as umbra beneath the eyelid is not likely to be marked, the fluid through which the light passes being transparent. Attention may, however, be called to the parts, by the recurrence of nasal polypi in these cases, and by the muco-purulent discharges which sometimes accompany them. In one of his cases the patient occasionally had a discharge of greenish yellow fluid from the right nostril; both inferior turbinates were hypertrophied, and muco-pus was present in the middle meatus. Transillumination was the same on both sides. Two syringes of fluid were aspirated from the right antrum and nothing from the left. On opening the right antrum small cysts were found on the walls, and a tag of membrane, which proved to be the wall of a large cyst. The best method of treatment is to open the antrum and scrape the lining membrane, subsequently using antiseptic washes until healing takes place.

EMPYEMA OF ANTRUM IN A CHILD.

D'Arcy Power (*Brit. Med. Jour.*, Sept. 1897) gives the history of a boy aged eight weeks. His face was bruised with forceps in delivery. Subsequently he wasted. At the age of four weeks, he had swelling and redness beneath the right eye, with difficulty in closing the mouth. The abscess was opened and pus continued to flow. When seen by the author, the sinus opened into the antrum, and pus was exuding from the alveolar margin. He made an opening into the floor of the antrum. A drachm of pus was discharged. The child died ten days later. Only a very few cases have been recorded in children so young.

THE USE OF X RAYS IN DISEASES OF NOSE AND THROAT.

One of the most interesting papers that was read and discussed before the laryngological section of the Twelfth International Med-

ical Congress at Moscow, was the one upon the above subject by Dr. John MacIntyre of Glasgow. (*Jour. Laryngology*, November, 1897.)

After giving a full and minute description of the apparatus required, with all its various parts, he dwelt upon the pathological conditions in this special department, in which the X rays had been found of value. (1) Foreign bodies in antrum of Highmore, larynx, mouth and œsophagus. (2) Injuries, such as fracture of hyoid bone, superior maxillaries, etc. (3) Tumors, malignant disease, etc. (4) Fluid in pleural cavity, deposit in apex of lung, etc. (5) Other conditions, such as ossification in cartilage of larynx, anatomical specimens of internal ear, inside cranium, mastoid, etc.

As indicating the large extent to which skiagraphy had already been applied, Dr. MacIntyre also exhibited photographs of foreign bodies in the region of the œsophagus, neck, etc.; malignant disease of the upper maxilla; photographs of the cartilages, tongue and pharynx, as seen through the neck; the thorax in the adult and youth; photographs of the same in early life, showing development; photographs of the heart (normal), hypertrophy of ventricles in chronic and acute diseases; anatomical specimens of internal ear, œsophagus, larynx, etc.

TREATMENT OF LARYNGEAL TUBERCULOSIS.

This was another important subject of discussion taken up by the Medical Congress at Moscow. It was devoted to the progress made since the meeting of the last International Congress, and was opened by Dr. Gleitsmann, of New York (*Journal of Laryngology*, October, 1897). He insisted on the importance of remembering that laryngeal tuberculosis is only, as Semon has well said, a local manifestation of a general infectious process. The percentage of cures is still very small. The treatment is under three headings—general medicinal, local medicinal, and surgical. He still believes that creosote is the most important medicine for internal treatment. But the carbonate compounds, such as creosotal, carbonate of guaiacol, and benzosal, are more effective and easier taken than the simple creosote. The serum-therapy in any of its forms he has found unsatisfactory.

Local applications by means of atomization, inhalation, and insufflation have made a good record, and will continue to be used.

Intratracheal injections of creosote, benzoinol, guaiacol, and menthol have been reported favorably upon; but lactic acid con-

tinues to maintain its place as the most widely used application for laryngeal tuberculosis.

Surgical treatment: He believes that amid the multitude of methods advised, curettement still holds the highest place. Its advancement during the last three years, both in Europe and America, has been steadily onwards. In using curettement the cases should be carefully selected. The removal of all the diseased tissue at one sitting can rarely be accomplished. Hajek operated twelve times on one case before obtaining a cure. Curettement is indicated in cases of primary laryngeal tuberculosis; in circumscribed ulceration and infiltration; in dense infiltration of the arytenoid region, of the posterior ends of the ventricular bands and tumors of the epiglottis; in the incipient stage of pulmonary disease, with little fever and no hectic symptoms, but in which the larynx is somewhat affected; and to relieve dysphagia, in some instances, even when advanced pulmonary disease co-exists.

Contra-indications are: (1) Advanced pulmonary disease with hectic; (2) disseminated tuberculosis of larynx; (3) extensive infiltrations, producing severe stenosis. In these, tracheotomy or laryngotomy must be considered.

Gleitsmann also referred to Chappelle's favorable reports of the result of sub-mucous injection of creosote in oil of wintergreen and castor oil, parts 1 to 8; and to Scheppegrill's cupric interstitial cataphoresis. Spherical electrodes of chemically pure copper are used, and the results reported are good. This treatment is simplified by the use of the autoscope.

NASO-PHARYNGEAL POLYPI IN CHILDREN.

Doyen (*Arch. Intern. de Laryng., Otol. et Rhinol.*, May and June, 1897), reports three cases in which he has removed readily bleeding naso-pharyngeal polypi from children. It is rare for these growths to form so early in life. To remove them, he has a specially devised raspatory. He first inserts a finger into the naso-pharynx to make out the attachment, then seizes the polypi with forceps, and drawing it down, severs the connection with one or two strokes of the raspatory. Profuse hæmorrhage occurs, but quickly subsides on applying pressure.

REMOVAL OF THYROID FOR EXOPHTHALMIC GOITRE.

Doyen (*Acad. de Med.*, July, 1897), reports two well-marked cases, from whom had been removed almost the entire gland. The piece

left in each case was about the size of an almond. In one of the cases cure remained complete two and a half years later. In the other four months later. The first patient commenced to take sheep's thyroid some months after the operation, but palpitation, enervation, and exophthalmas returned. On discontinuing the thyroid the symptoms disappeared, and she remained well. The author asks why section of the sympathetic should be resorted to, when removal of part of an over-secreting gland is so clearly indicated?

Poucet, in the same issue (*Acad. de Med.*), does not answer the question, but reports nine female cases in which he had operated by dividing the cervical sympathetic nerve. Benefit accrued in all cases. In some the results were lasting, in others of shorter duration. Older patients did better than younger ones.

FATAL HÆMORRHAGE FROM THE REMOVAL OF ADENOID VEGETATIONS.

Schmiegelow (*Centralblatt für Chirurgie*, August, 1897) gives the history of a case in the practice of a surgeon in which the operation was fatal. The surgeon had frequently operated successfully before. The patient was a boy *æt.* 12 years. There was nothing unusual in the case, except that the adenoids were very prominent; and that there were scrofulous glands in the neck. The operation was done without anæsthesia, and the ordinary Gottstein's curette was used. Without any warning, a sudden gush of arterial blood issued from mouth and nose. Tamponing was prompt, and intravenous saline injections were administered, but in a few minutes the boy was dead. On *post mortem* examination, the internal carotid artery was found to have been opened, just in front of its entrance into the carotid canal of the pars petrosa ossis temporis. The author supposes that swollen glands had pushed the vessel forward so that the pressure of the knife caused its rupture, for it was not cut. (*Laryngoscope.*)

ORTHOPÆDIC SURGERY.

IN CHARGE OF

CLARENCE L. STARR, M.B. Tor., M.D. Bel. Hosp. Coll.,
Assistant Demonstrator of Anatomy, University of Toronto.
Surgeon to Industrial Refuge.

A CASE OF ASYMMETRICAL DEVELOPMENT.

Dr. A. R. Shands, of Washington, D.C., has recorded a very interesting case of asymmetrical development in a boy twelve years of age.

When two years of age, it was noticed that the right side of the body seemed to be developing faster than the left, and the unequal growth has continued to the present time.

Inspection now reveals an enormous hypertrophy, of soft parts and bones, of the right side, including face, upper and lower extremities. Large purple markings are also seen showing greatly dilated capillaries.

An interesting feature of the case is the fact, that the left thumb measures three and one-half inches in circumference, while the right measures only three, and that one of the toes on the left foot is larger than the corresponding toe on the right foot.

The following measurements show the great differences in the two sides :

	Right.	Left.
Ankle	10	8
Calf	15	9
Thigh	18½	13
Forearm	8	7½
Arm	8	8
Ball of hand	8	7¼
Little finger	2¼	1½
Length of lower extremity	28½	24
Length of foot	9½	7½

The case is exceedingly interesting not only on account of its rarity, only three or four similar cases being reported, but also on account of its obscure etiology.

It seems to be distinct from acromegaly, which, as pointed out by Dr. Adler, always affects both sides, unless, perhaps, the fact that the left thumb and one toe of left foot show a commencement of the hypertrophy which may extend over the whole left side.

Elephantiasis is the only other condition which is at all similar, but this may be excluded from the fact that in the case reported the bones, as well as the soft parts, are included in the hypertrophic condition.

MECHANICAL TREATMENT OF INGROWN TOE-NAIL.

Dr. Henry Ling Taylor, of New York, in a paper on the above subject, defines the condition as an infected and irritated ulceration of the soft parts at the margin of the nail. The causes, he gives as improper shoes, a careless toilet of the nails, or accidental abrasions, which in most situations would prove trivial, but here become readily infected by germs, which thrive wonderfully in the genial warmth, moisture, and darkness of such an ideal incubator as the swathed foot.

Numerous operations are suggested, and that none of them are perfect the large mass of literature on the subject testifies.

Mechanical methods have been tried, such as raising the impinging edge of the nail by inserting bits of gauze or other substance beneath it, scraping the surface of the nail, or by pressing away the granulations by a small and carefully adjusted compress, all with varying degrees of success.

The treatment suggested in the paper is a modification of the method employed by Mr. H. T. Masters, of Whitechurch, England.

A flat strip of silver $\frac{1}{100}$ of an inch thick, one-eighth of an inch wide, and an inch long, is bent by means of small forceps into the shape of a fish-hook.

The hook will fit the toe better if shaped from a strip of metal slightly curved on the flat, and so bent that the shorter edge will be in front. In this case the hooks will be of two kinds, right and left.

The hook is inserted beneath the lateral edge of the nail in such a way as to include it in the barb of the hook, while the shank curves over the side of the toe and presses the granulations back from the nail.

It is advisable to first cleanse the surface of the toe with peroxide of hydrogen, and then apply a pledget of cotton soaked in a 4 per cent. solution of cocaine. A little gauze is applied to absorb discharge, and the hook held in place by a turn or two of gauze bandage.

GLUTEAL BURSITIS.

Dr. E. G. Brackett has reported several cases of gluteal bursitis (Transactions of Amer. Orthopædic Assoc'n, Vol. 9) which are interesting to note, on account of the fact that they give rise to symptoms which might readily be mistaken for hip-joint disease.

The clinical symptoms are : early and persistent limp, without remissions as in hip-joint disease ; pain in back of thigh and knee ; limitation of motion in extreme flexion ; rotation outward, and flexion of the extended limb.

Treatment consists in opening the sac through an incision along the lower edge of gluteus maximus, thoroughly curetting and packing wound with gauze, allowing it to heal by granulation.

In two cases tubercular disease developed elsewhere within a year, and in two others the scrapings from the sac were found to be tuberculous in character.

Editorials.

THE VICTORIAN ORDER OF NURSES.

WE have had occasion to refer occasionally to the proposed establishment of a new order of nurses in Canada during this year. In our last issue we made the statement that 99 per cent. of the profession were opposed to the scheme. Under the circumstances then existing it will now generally be conceded that that statement was correct. We know of no one in the profession that is now prepared to support the scheme that was presented to us in the early part of this year.

We certainly should highly appreciate the fact that the promoters of the old scheme have been influenced by actions of our profession, as shown by resolutions of medical societies and in other ways, and have deleted so much that was objectionable to the members of our profession. It is rather unfortunate at the same time that they have taken no steps to inform the public that they have abandoned the old and adopted the new scheme.

They have given up the idea of allowing their nurses to act as obstetricians; they have dropped all references to the paucity of MacLures in Canada; they have laid down rules which are intended to protect our trained nurses; they have adopted what is called "district nursing." It is our duty as physicians to forget certain unpleasant allusions to our profession, and all the other things in the old scheme that were distasteful to us, and consider the new scheme (which bears the old name) on its merits.

The new provisional constitution was presented to a large meeting of the physicians of Toronto, held in St. George's Hall, December 1, when a majority were evidently opposed to the scheme. At a public meeting held in the Pavilion, December 4, under the chairmanship of His Excellency the Governor-General, Drs. Temple Grasset, Geikie, Thorburn, and Cameron, favored the scheme. As far as we can ascertain, very few of its opponents were present. One

of the physicians who endorsed the new constitution said that he had reliable information that the opposition recently shown at the meeting of medical men in St. George's Hall had since been largely melted away.

We have just received a communication from Dr. Playter (which we publish in this issue), and are unable to understand what he means by saying that the "nursing project was misunderstood and perhaps unwittingly misrepresented." What has the project which we were considering last June, as described in a certain pamphlet got to do with Dr. Worcester's plan of district nursing? Nothing, so far as we can discover. Why is it that certain supporters of the new scheme try to make it appear that a few months ago we were unable to understand English, and consequently required some instruction from a man in Massachusetts? Why is it that others try to make it appear that we are being dragooned into line by influences, which need not be discussed, but are generally understood? Why will they not allow us to accept the new scheme, if we choose, without any irritating references to the old project which the profession almost unanimously refused to accept?

DISTRICT NURSING.

We have no doubt that district nursing, when properly carried out, is an admirable thing for the sick poor (considering the word poor to include both paupers and others with limited means). Dr. Alfred Worcester, of Waltham, Massachusetts, came to Canada to discuss the subject, and explain his methods in his own country. He is a cultured and able man, and was exceedingly courteous towards all with whom he came in contact. He told us he embraced the opportunity to bring before his fellow members of the profession, and the public, the true light of the scheme which had been his life work. He was also influenced by his veneration for the attributes of true womanliness, the grace and queenly motherliness of her who occupied the British throne, and he stated that any movement that had for its patron such a distinguished and noble woman was something he felt proud to be identified with.

He explained how district nursing was a blessing to those who were unable to pay for trained nurses. The standard was kept up, as only competent nurses were accepted; and these were required to undergo further special training to more properly fit them for their special work. They did not come into competition with their professional sisters, as they were not allowed to attend cases where the families were able to employ trained nurses on the usual

terms; nor did they interfere with physicians, because they would work only under their supervision. They went from house to house, making from three to eight visits a day, and collected a small fee when they could—say about twenty-five cents an hour. Such fees were handed in to the local treasurer of the nursing fund.

As far as we could understand Dr. Worcester, such is a brief outline of the methods employed by him in Waltham and vicinity, and he expected that similar methods would be adopted by the officers of the Victorian Order. Without any reference to the new scheme for Canada, we are ready to heartily approve of district nursing under good governance, and to express an opinion that the doctor from Massachusetts is doing good work in his own state.

THE SITUATION IN TORONTO.

District nursing is not unknown to the citizens of Toronto; and we are not at all certain that it was necessary to bring a man from Massachusetts to Canada to explain it to us. In our last issue reference was made to the report of the work done in connection with our Nursing-at-Home Mission of Toronto during the month of October, showing that 375 visits had been paid to 38 poor patients. This, however, gives us exceedingly little information respecting the amount of similar work that is being done by numerous organizations, such as various Orders of Deaconesses, Sisterhoods of different sects, and numerous national benevolent societies. It might be difficult for those who have paid special attention to the work of these various orders to form any adequate conception of the vast amount of good which has been accomplished in a very unostentatious way, and with a comparatively small amount of money.

In addition we have a goodly number of hospitals (perhaps too many), general and special—all doing good work for the sick poor—and all sadly crippled from want of funds. One of our most worthy charitable institutions, the Hospital for Sick Children, is struggling along with the tremendous incubus of a debt of \$70,000 resting upon it.

Notwithstanding all that our good and charitable folk are doing, however, the fact remains that there is still a great deal of suffering in our city, which might be alleviated to some extent at least by conscientious and competent nurses. Any scheme that may be devised which is likely to work in that direction is worthy of very careful consideration. Although we are referring especially to Toronto, we believe that similar conditions exist in other cities and towns throughout the Dominion.

THE ATTITUDE OF THE GENERAL PROFESSION TOWARD THE NEW SCHEME.

We are not in a position to give a very positive or definite opinion as to the attitude of the general profession of Canada towards the new scheme. There has been no pronouncement of any organized body of medical men since the new provisional constitution was presented. We are certainly glad to be able to say that a great portion of bitterness has disappeared from the arguments of its opponents. The promoters, and especially Their Excellencies, the Earl and Countess of Aberdeen, have shown an earnest desire to respect the rights and opinions of the members of the medical profession, and such thoughtful consideration on their part is very highly appreciated. There is a general feeling in this country that no representatives of Her Majesty have ever put forth more strenuous efforts for the good of the people at large than the couple who now reign at Rideau Hall. If we cannot in all respects coincide with their views, we can at least honor them for their innumerable good deeds.

We regret exceedingly that we are unable to endorse the scheme which Her Excellency now has at heart, and which has so much that is really good in it. Some of our physicians object to the importation of nurses from Great Britain and the United States under any circumstances. Some think district nurses, who have first received a training of three years in a general hospital, and special training thereafter of six months, will know a little too much to be obedient nurses, and too little to be good doctors; and that they will do a good deal of work for a shilling an hour that ought to be done by physicians.

We do not care at the present time to consider in detail such arguments, but prefer to take a broader view of the subject, and consider the new scheme as a whole. We fear that the project is impracticable because it involves such a ponderous and expensive machinery to carry it out. Unless the fund subscribed were very large there would be a danger that it might all be spent before the sick poor were reached at all. It would be exceedingly difficult, if not practically impossible, to preserve anything like order and discipline in an immense organization extending from the Atlantic to the Pacific through a central executive board situated at Ottawa.

By a process of evolution, after many long years of earnest, patient work on the part of numerous bands of good men, good women, and good children, we have a net-work of noble charities

throughout this country. The machinery, sometimes humble in its way, is in excellent running order; needing, at a great many points, only a little more oil in the shape of money. We believe that the good and charitably-disposed can do infinitely more in the interests of suffering humanity by giving money to the institutions at present existing in our midst than by supporting the new scheme which contains no proposition to do anything that is not now being done in we think a better and cheaper way.

NOTE.—Since the preparation of this article we have received information from various quarters, both in and out of Toronto, which leads us to conclude that a large majority of our physicians in Ontario have decided not to endorse the new scheme.

Correspondence.

VICTORIAN ORDER OF NURSES.

Editor CANADIAN PRACTITIONER (Toronto) :

SIR,—When, at the Ontario Medical Association meeting in June, the subject of the "Victorian Order" for providing district nursing was discussed, I was in full sympathy with the resolution passed by the Association in respect to that subject. Why? Because the object of the nursing project, from having been misunderstood, and perhaps in a measure, unwittingly, misrepresented, I was under a false impression in respect to it.

Since Dr. Worcester, of Waltham, Mass., who has made a special study of the subject both in Europe and America, and has had much practical experience in district nursing amongst the poorer classes in Massachusetts, has been in Ottawa and explained the working of such a system and its most excellent results, my views have changed ; as also, I particularly desire to state, have the views of a number of the medical practitioners of this city with whom I have had converse on the subject.

To be brief, three special advantages may be named as almost certain to result from the proposed nursingscheme if carried out, as follows :

First. It would be a decided advantage (rather than a disadvantage) to our already somewhat considerable army of regular nurses, by increasing, probably in a little time quadrupling, the demand for these "Ministering Angels."

The new order of nurses would go forth amongst the sick and distressed of the poorer classes, visit them, only, say, for an hour or so (never remaining for a day or a week), for a small sum paid to the Home, not to the nurse.

One of them would be sent out, say, to a woman at the commencement of labor, by the physician engaged. She would take the place at the bedside and in the room of the very incompetent neighbor or friend, or even mother, of the patient, now commonly in attendance. With a knowledge of the requirements of the case, with kindly sympathy, tender and clean hands, she would arrange

everything for the comfort of the patient, the prospective baby, and also for the coming physician ; and in the best possible manner, very different from that in which they are now commonly arranged ; sometimes providing from the Nurses' Home certain necessities not obtainable in the patient's house.

If properly chosen or selected, as naturally adapted to this sort of semi-mission work, the district nurse would bring such a stream of sunshine (really and figuratively, with fresh air), such confidence, cheerfulness, hope and comfort, as would not only produce a favorable individual effect on the patient, but cause her family and neighbors to make great efforts on other occasions of the kind to employ a regular outside nurse for some days or a week or two, in order to have the benefit of a nurse's constant attendance, instead of only visits.

So in a case of pneumonia, of enteric fever, of acute rheumatism, pulmonary tuberculosis, or any other disease. The very natural results of this sort of nursing would be, and as appears to have been Dr. Worcester's experience in Waltham, to greatly increase the demand for the regular nurse, as now provided.

Second. The district nurse is to be sent out only under a physician, it appears in all cases, and she can not fail to prove a very great time and labor saver to the physician, in all cases in practice which she attends, especially in midwifery practice. This, Dr. Worcester states, is his experience. She will let the attending doctor know just when he is needed at the bedside, saving him hours of patient, or impatient, waiting ; or "watching" calls or visits ; she will enable him to leave the case sooner, and to know when other after calls would be most needed, by her morning visit to the patient and reporting the conditions.

Third. The district or visiting nurse would by her sympathetic presence and other personal characteristics, and her knowledge and acts, bring into the often unventilated, unclean, perhaps darkened, noisy, ill managed, unhappy house of the sick, pure air and light, cleanliness, quiet, comfort, etc., and so assist immensely to promote recovery and health, abbreviating the period of illness, preventing suffering, despair, death ; in a word, to lessen the mortality by modifying and removing the cause of it, wherever she might be sent.

Trusting the above may enable the readers of *THE PRACTITIONER* to a better understanding and appreciation of the proposed "Victorian Order."

I am, etc.,

Ottawa, November 25, 1897.

EDWARD PLAYTER.

Meetings of Medical Societies.

TORONTO PATHOLOGICAL SOCIETY.

MEETING October 30, 1897, Dr. H. B. Anderson in the chair. Members present: Drs. Wishart, McPhedran, Reeve, Wm. Oldright, Primrose, Cameron, J. J. Mackenzie, Amyot, Peters Greig, Carveth, Hamilton, Bruce, Parsons, Bingham, Rudolph. Visitors: Drs. Hastings, Watson. Drs. Bingham and Rudolph were elected members.

FRESH SPECIMENS.

Dr. Wm. Oldright presented a sac removed last evening from the cavity of the uterus of a woman suffering from copious hæmorrhage and expulsive pains. The sac is about $1\frac{1}{2}$ inches in diameter, the wall and contained fluid are translucent and transparent except in spots in the wall to which tissue presenting a placental appearance is attached. About two drachms of this tissue were removed separately from the sac, torn from it in removal. No embryo can be perceived on holding the sac between the eye and the light. The case was seen in consultation, and Dr. Oldright had failed to get a satisfactory history last night. He had this evening rung up the gentleman in whose practice the case had occurred, but he was out.

Dr. Wishart presented (1) the uveal body and choroid and foreign body removed. The patient from whom these were removed was a blacksmith. In striking the iron alternately with his mate the latter struck out of time and a piece of iron $\frac{7}{16} \times \frac{8}{16} \times \frac{8}{16}$ of an inch struck his eye, penetrating the cornea and sclera.

(2) A piece of stone somewhat larger than in No. 1 which had penetrated the cornea and sclera of a stone-worker's assistant.

Dr. Reeves presented an eyeball which had been torn open by a splinter of wood. There was a corneal wound of about $3\frac{1}{2}$ lines; the iris was badly torn, and the lens dislocated. The projection field was seemingly normal, and the patient could see fingers. Four days later patient complained of sudden intense pain. A few minutes later examination showed free intraocular hæmorrhage,

blood-carrying lens, etc., with it, escaping from the wound and flowing between the lids. Two days later there were signs of panophthalmitis and enucleation was done. Section of the globe shows it to be practically filled with blood, save at the centre where the retina and choroid are found.

The case is one of interest from the occurrence of destructive secondary hæmorrhage four days after receipt of injury. The specimens are mounted after the Priestly-Smith method, in a solution of formaldehyde.

Dr. George A. Bingham showed a malignant adenoma of the rectum. See page 859.

Dr. Peters, in discussing Dr. Bingham's paper, said: The early age at which this disease appeared in this case (23 years) is interesting. It appears to me that malignant disease occurs in the rectum at an earlier period than in any other part of the body. I have seen a case in a patient 21 years of age, and cases at even an earlier age are reported.

The specimen shows a large papillomatous growth, showing, as the reader of the paper stated, that the malignant disease was engrafted upon an originally benign growth.

This specimen is lower in the rectum than is usual, as it is not usual to have the sphincter involved by malignant disease of the rectum. No doubt the original papilloma was close to the sphincter, thus determining the position of the cancer.

Dr. Anderson, in referring to the age at which malignant adenomata may occur, mentioned a case reported by W. A. Garrard of a cancer of the colon in a child under 11 years of age.

Carcinoma of rectum is comparatively common. Bland Sutton, in his "Tumors, Benign and Malignant," says that of 100 cases of cancer of the bowels, 75 occurred in rectum and 10 in sigmoid flexure.

Dr. Bingham, replying, said: In regard to the age at which this disease is met with, while it is a disease of middle life or later, yet not very unfrequently it is met with earlier in life. Of 87 cases recorded, 11 occurred between the ages of 20 and 30. To the surgeon the most interesting point is the fact that this disease may progress to almost any length without giving rise to any symptoms of sufficient importance to necessitate, in the opinion of the patient, the calling in of the surgeon. Therefore, when we meet any case with such indefinite symptoms as (1) diarrhoea alternating with constipation, (2) sero-saneous discharge, (3) indications of obstruction, we should carefully explore, and examine by microscope.

Dr. Rudolf read a paper on "Persistent Foramen Ovale." (See page 879 of this issue.)

Dr. Greig, in discussing Dr. Rudolf's paper, said: This specimen can scarcely be considered rare, because if more post-mortem examinations were made on children under two weeks of age, we would find it to be the common condition. The foramen ovale seldom closes before ten or twelve days after birth, and it very frequently remains open till the age of six months and longer.

Dr. Parsons: Last winter, at the Children's Hospital in London, Dr. Dickenson showed me three hearts from children who had died suddenly. The condition was that of imperfect development of the interventricular septum, the deficiency being at the upper part.

Dr. Rudolf, in reply: Holt considers patent-foramen ovale one of the common causes of sudden death in children. It is a fairly common condition. Recently he had seen a foramen ovale in a cow through which a pencil could be passed.

The notes of a case of miliary tuberculosis were given by Drs. Watson, Carveth, and Anderson.

Dr. Watson: The patient, a man, came under my observation on July 24th last, complaining of constipation and general abdominal pain. I was aware of the fact that he had had syphilis previously, and used much alcohol. He was given a purge, but was no better after two days, when seen again. The abdomen was found enlarged, containing fluid. In the following twenty-eight days he was tapped four times. There was a decided cachexia. The diagnosis lay between syphilis, tuberculosis, and cancer. Later tubercle bacilli were found in the sputum. The patient declined operation, and died on Oct. 19th.

Dr. Carveth: At the post-mortem the abdomen was not found enlarged. There was a scar on the penis. In the abdomen everything was firmly matted together, liver, stomach, intestines, etc. On examination miliary tubercles were found in the liver and intestines but not in the kidneys.

The liver was cirrhotic and divided into sections by deep grooves $\frac{1}{4}$ of an inch deep at right angles to one another. No amyloid change was present, but numerous miliary tubercles. The kidneys were fairly healthy, the capsules a little adherent. The omentum and stomach were firmly adherent to the liver.

Thorax—both lungs adherent to the chest wall. They show numerous miliary tubercles. In the apex of the right lung were numerous abscess cavities. Before death the sputum contained any tubercle bacilli.

ORGANS FROM A CASE OF MILIARY TUBERCULOSIS.

Dr. Anderson spoke of the microscopic appearances presented.

The lungs showed large numbers of miliary tubercles in which few giant and epitheloid cells are found, the affected portions presenting rather small areas of caseous necrosis, staining diffusely with eosin.

The liver presents a well marked cirrhosis, the new-formed connective tissue being irregularly distributed. The liver cells are atrophied or destroyed in many places. No tubercles were visible on gross examination, but the microscope shows many diffusely staining necrotic areas with deeply staining particles (nuclear remains) in them and surrounded by a small round-celled area of polynuclear leucocytes and proliferated connective tissue cells. Very few tubercles with typical giant and epitheloid cells are to be found, even the smallest tubercles showing the necrotic conditions very marked. This is rather characteristic of the process of the bile ducts.

The spleen shows large numbers of the same necrotic foci, which on superficial examination do not look like tubercles.

The kidneys are somewhat cirrhotic but no necrotic foci were to be found.

It is interesting to note the frequency with which a terminal infection with the tubercle bacillus follows a cirrhosis of the liver, as in the present case. Osler calls attention to this point, quoting Pitt's statement that in 22½ per cent. of the fatal cases of cirrhosis of the liver examined in Guy's Hospital during a period of twelve years acute tuberculosis was found present.

The meeting then adjourned.

The next meeting of the society was held Nov. 27, 1897, Dr. H. B. Anderson, president, in the chair.

Dr. W. H. Pepler was elected member.

Present : Drs. Anderson, Primrose, J. J. Mackenzie, Peters, Cameron, Wm. Oldright, King, Greig, Pepler, Amyot, Nevitt, Fotheringham, Hamilton, J. McCallum, Bruce, Rudolph, Parsons.

Visitors : Drs. Mullin, Perry, Hastings, Silverthorne.

In presenting a specimen removed from the body of a drowned woman, Dr. Greig said the external appearances of the bodies of the drowned do not exhibit any constant condition. The condition of the internal organs is also very various, and in some cases it is impossible to prove that drowning was the cause of death. The time-honored signs of death by drowning are : Cutis anserina, retracted penis, fixing of the tongue behind the teeth, an upright position of the epi-

glottis, cinnabar red color of the mucous membrane of the trachea and large bronchi, the presence of froth in the trachea, the presence of water in the lungs and in the stomach, an elevated diaphragm, etc. The most constant of these conditions found are the presence of froth in the trachea, and of water in the lungs and in the stomach. It has been shown by different writers that all the other conditions may be found in bodies which have not been in the water. Even the sign of froth in the trachea has been found from other causes of death than drowning.

In the case in question, death had occurred short'y after a meal, and we could not say whether the stomach contained water or not.

Whether water is found in the lungs or not depends altogether on the length of time that the body remains in the water. If the body is found soon after death, the lungs will be found distended and feel like a sponge filled with water. If, however, the body lies in the water several days after death, the water may pass by a process of osmosis from the lungs to the pleural cavity. Therefore, in making post-mortems on these cases, the pleural cavity should be carefully examined before the blood vessels at the root of the lungs are cut.

The other specimen is a corpus luteum, which at present, however, is devoid of medico-legal interest.

Dr. E. E. King, discussing Dr. Greig's paper, objected to the theory of osmosis.

Dr. Oldright : Why does osmosis not occur from the stomach ?

Dr. Greig, in reply : Osmosis is the recognized explanation of the condition. Shortly after death by drowning, the lung is found full of water, like a saturated sponge. It is supposed that later this passes by osmosis into the pleural cavity. There is also osmosis from the stomach at times.

Dr. Anderson : At the time of the autopsy there was much fluid in the lungs, which had a general distribution, and not alone in the dependent parts.

Dr. Pepler read a paper on the "Pathology of Baldness and its Relation to Seborrhœa." (See page 871.)

Dr. Fotheringham, discussing Dr. Pepler's paper, asked if any explanation were offered, allowing the microbic origin of the disease, of the constancy of the area affected, namely, the forehead and vertex, and not the lateral and lower occipital regions of the scalp. Also why age should have so constant an ætiological connection with alopecia.

Dr. Parsons : In a recent number of *The British Medical Journal*

Dr. Thin reports two further cases of alopecia areata, in which the findings were similar to those described by Prof. Huxley, for him, before the Royal Society. He refers at length to the thesis of Sabourard, and points out the similarity of the organisms found by him to those described by Sabourard. As to the position of the bald area, it was, in one case, on the thigh, involving the anterior and outer part. The writer is most emphatic with regard to the contagiousness of the condition. The alopecia of syphilis naturally arises in one's mind in this connection. Can there be a local cause in this case as in infective alopecia?

Dr. Edmund E. King related a case of alopecia areata developed on the outer aspect of each leg. It was first noticed about ten or twelve years ago, when the size of each spot was about one inch by two. It has spread slowly but continuously, and now it has reached five by ten inches. No neuralgic pain had been noted, and in an examination made some years ago no parasite had been discovered.

Mr. J. J. Mackenzie called attention especially to the interesting specific action of the toxine upon the hair follicles. If this fact be confirmed, it would go a long way to confirming the etiological position of the bacillus of Sabourard.

Dr. James MacCallum: Ordinary baldness is scarcely identical in origin with alopecia areata, for in the latter the onset is usually after some neuralgia or other nervous or emotional disturbance, and is probably tropho-neurotic in origin rather than bacterial. Again, the patch of areata does not, I believe, show around it any colorless hairs, although there is a certain seeming resemblance in the atrophy of the structures of the scalp in both alopecia areata and ordinary baldness. Again, stimulation of the scalp by means of antiseptic agents, such as hydrarg perchlor, will cause the return of the hair in short order, while in ordinary baldness it is practically useless. I cannot believe that baldness is in every case due to these micro-organisms of Sabourard, or to other organisms—these are one, but not the only cause of baldness. I have seen three cases of complete and entire baldness, there being not a single hair on the body—one due to syphilis, the other two having no sign or history of syphilis, congenital or acquired, and no history of contact or contagion.

Dr. Nevitt asked if seborrhoea always lead to baldness.

Dr. Carveth said: All cases are not parasitic, as a woman may become completely bald with each pregnancy. He asked why women are less often bald than men? Why are the English scientists and medical men less bald than our men at the same age?

Dr. Starr said that since Sabourard's paper was published he

had been thinking that it is possible that ordinary baldness resulting from seborrhœa is the result of the development of a toxine resulting from the growth of the bacillus of seborrhœa. Whether this is the same bacillus as that in alopecia areata, he was not yet prepared to say.

Another reason for thinking that a toxine is the cause of the baldness is the fact, that after fevers in which there are various toxins developed, baldness is very likely to occur. This, of course, is usually transient, probably because the toxine is soon eliminated; while in the baldness resulting from seborrhœa the cause is kept up for such a length of time that eventually the hair follicle is unable to recover itself.

Dr. Pepler replying: In answer to Dr. Fotheringham as to frequency of position, said the hairs on the most frequent position for baldness are less nourished. The hereditary influence was occasioned by the probable contagion, and by the susceptibility to the toxine being handed down. To Dr. Nevitt's question, Does seborrhœa always lead to alopecia? Yes, either to a greater or less extent according to the individual, and susceptibility to the person. In answer to Dr. Mackenzie's question, why he had difficulty in demonstrating the organism? said it was due to the examination not being made deep enough to get the bacillus.

HYPERTROPHY OF SINGLE KIDNEY AND EMBRYONIC KIDNEY.

Dr. E. E. King: The specimen shown was found at an autopsy held on the body of a man, æt. 60, who fell dead, as a result of rupture of the heart. On careful enquiry from his family, no history of previous illness, particularly referring to the kidney, could be ascertained. He had endured considerable hardship, and was a free liver. Had taken an excess of alcohol for some years. The kidney on the right side was found to be very much enlarged, about twice and a half that of a normal kidney. The kidney substance showed gross hypertrophy, and consequently I have called it hypertrophy of a single kidney. On the left side was found this embryonic (?) kidney. The kidney substance is practically nil, while the pelvis and ureter are about normal in size; both ureters are complete and patent. There is not much to say on the case, excepting possibly that the man has lived freely, been frequently examined and passed for life insurance, and no suspicion of any kidney defect had been discovered.

Dr. King also presented a specimen from a tabetic, showing cystitis, pyelitis and pyonephrosis. The left ureter showed two strictures with

marked dilatation above each. The right ureter was much thickened. The bladder was much hypertrophied and pocketed.

Dr. Silverthorn in discussing Dr. King's paper, said, in the case of

CYSTITIS, PYELITIS AND PYONEPHROSIS IN THE PARALYTIC,

there was no stricture of the urethra and a prostate not very hypertrophic, still a very hypertrophic bladder and with ureters dilated, the one in the left very much thickened with three points of stricture in its length, the one in the right slightly dilated.

In paralytics we find often this cystitis, and consequently pyelitis.

Can this condition arise without catheterization?

How did the dilatation in bladder and urethra take place?

Probably due to pus, blood, etc., with or without spasm of the urethra.

Dr. Oldright, in discussing Dr. King's paper, asked if there were any small calcareous masses or semi-organized clots present at any time? He had seen distension of ureters caused in this way. Collections of pus discharged after the ureter had been freed from these small blocking masses. In one such case operation had been decided upon when this freeing suddenly took place.

Dr. Amyot suggested that the urine being ammoniacal acted as an irritant causing spasm of urethra and consequent retention of urine in bladder. Dilatation of it by pressure on anterior lip of ureter hindered flow of urine into bladder, and consequent dilatation of the lower part of the ureter where there is anatomically no obstruction, as in the specimen.

Dr. Primrose said the specimen presented as hypertrophied kidney is interesting because the existence of true hypertrophy of the kidney is denied by some pathologists. In cases in which one kidney is removed for disease the other enlarges, but the enlargement is due to dilatation of the tubules and glomeruli, and of the blood vessels and lymphatics. True hypertrophy would imply a uniform increase in number of all the tissue elements. This, it is held, does not occur in the kidney. In cases of the existence of a single kidney of congenital origin we have to deal with two kidneys fused into one with a single ureter. Dr. King's specimen consists of two kidneys and ureters, one of the kidneys being very much enlarged and the other diminutive in size.

Dr. King, in replying, said: I do not agree with Dr. Primrose's definition of hypertrophy. The organ is undoubtedly enlarged to the size mentioned. While I cannot say that there are more pyra-

mids and a greater number of tubular and malpighian bodies than in a smaller and normal kidney, I can say that the organ is in the condition that I have always accepted as hypertrophied. The condition is by no means unique, yet it is of sufficiently infrequent occurrence to present to the Society.

Dr. Wm. Oldright showed a specimen of

CARCINOMA OF THE BREAST AND NEIGHBORING GLANDS.

M. H., unmarried, aged 32. History not clear as to anything unusual before January, '97, but in that month the patient received a blow on the left breast from a child who was playing with her. Since that time growth has been unusually rapid. Halsted's complete operation was performed on Nov. 18th. You will notice one very large gland, about one and a-half inches in diameter. On cutting open the breast after removal, a small cyst was found. Drops of straw colored fluid had exuded from the nipple on pressure before removal.

Dr. Peters: There is a cyst in the central portion of the tumor such as is often found in adeno-fibroma. The rapid growth might perhaps be accounted for by the fact that sarcomatous or carcinomatous growth has become implanted upon an adenomatous neoplasm. It appears to me a microscopic examination of the specimen is necessary to establish a diagnosis. The tumor appears to be somewhat distinct from the breast tissue, and does not show the infiltration usually found in carcinoma. The tumor is large for the time it has been growing, and on section shows no appearance of epithelium in a state of fatty degeneration, no central fibrosed mass such as is usually found in carcinoma, and the section does not show the cupping one would expect.

Dr. Primrose spoke of the nitric acid test for carcinoma, whereby very small masses were made to stand out clearly in contrast to the surrounding healthy tissue.

Dr. Oldright, in reply, was glad Dr. Peters had raised the point about the infrequency of cysts in carcinomatous masses. He (Dr. Oldright) had made the same remark in discussing the matter with Dr. Dwyer, but the latter had said that he had seen them.

There was slight retraction of the nipple and adhesion of skin to the growth. The nitric acid test referred to by Dr. Primrose would be of value in some cases, but he could not see its utility when one went below the entire extent of the pectoralis major, and clearing out all lymphatic glands and fatty tissues as applied in Halsted's complete operation.

Dr. Parsons, before showing a specimen of

ANEURISM OF THE AORTA,

asked Dr. Hastings to give the clinical history of the case. Dr. Hastings said he knew very little of the case, as he had not seen the patient before death. The history, as given to him, was to the effect that the patient—a woman of about 70 years—was admitted to one of the charitable institutions of the city about one year ago, and more for old age than any distinct disease. The morning of her death she seemed well, ate a good breakfast, and shortly after went to the closet. The sister heard a noise, and went in to find the patient dead. Later Dr. Hastings had seen a relative of the patient, who said she was always apparently well but for occasional violent fits of coughing.

Dr. Parsons: The specimen is one of aneurism of the descending part of the arch of the aorta, and is interesting from the fact that, despite its great size, it was practically latent. Gerhardt has recently drawn attention to the frequency of latent aneurisms of the aorta. In this situation aneurisms are usually devoid of pressure signs, the most common trouble being pain from erosion of the vertebræ. In this case erosion had not occurred. On opening the thorax the left pleural cavity was found full of blood, and a large firm mass found at the inner and posterior part, firmly adherent to both ribs and spine.

The lung, as you see, is almost completely collapsed and airless, the lower lobe being quite so.

The interior of the sac contains a large amount of laminated clot, but there is a free canal through it.

The case is interesting from its having been practically latent, and its fatal termination by rupture into the pleural cavity.

Dr. Rudolph asked if the cough was in any way peculiar.

Dr. Parsons: Not as far as could be ascertained.

From the position of the aneurism it was wonderfully free from pressure on any important structures as far as could be seen.

Dr. Fotheringham read a paper on

CARCINOMA OF THE STOMACH,

showing specimen and microscopic preparation.

B. R., male, æt. 67. Out-patient Toronto General Hospital for some weeks previous to his death.

Diagnosis of gastric cancer made in first consultation, upon the following evidence:

(1) Appearance, color, emaciation.

(2) Chronic indigestion.

(3) Violent occasional pain not due to indigestion of food, and always referred to below the heart and outwards to left anterior axillary line.

(4) Occasional vomiting, never bloody, he said, not always due to eating, not large quantity of foul or acid matter, but usually small quantity of food in much the same state as when swallowed and usually very soon after swallowing.

(5) Hard board-like state of epigastrium, abdominal muscles elsewhere free from reflex tetany.

(6) No tumor could be felt at any time.

(7) Stomach not dilated; pyloric orifice plainly open.

(8) No serious constipation.

Ante-mortem diagnosis. Gastric carcinoma, probably of cardiac end, and affecting cardiac orifice.

Post-mortem examination made a few hours after death: Large mass found toward pyloric end of stomach, involving whole circumference of stomach, greater and lesser curvatures alike, very symmetrical, to about two inches to left of pylorus, which was quite uninvolved. Part of transverse colon was adherent to greater curvature, and part of duodenum and head of pancreas behind. No secondary growth formed anywhere except that retroperitoneal glands were much enlarged both above and below growth, and matted the aorta and inferior vena cava rather firmly together. Inside of stomach a false pylorus was formed by the new growth, rigid, and admitting finger easily to second joint. About one inch to left of pylorus, and same distance from greater curvature, hanging down from the anterior wall there was a pedunculated mass about 1 inch long, $\frac{1}{2}$ inch wide and $\frac{1}{4}$ inch thick, with thin fibrous pedicle. On greater curvature and posterior surface, about two inches from the pylorus, was an elevated surface, black, ragged and excavated, with floor formed by adhesion to transverse colon, about $1\frac{3}{4}$ inches long, 1 inch wide, oval, greater diameter along greater curvature, and all round it the spreading thickened growth in the stomach-wall. The contents of the stomach were about eight ounces of characteristic coffee ground material.

Microscopic examination. Pedunculated growth spoken of above shows highly vascularized fibrous tissue, with normal mucous membrane covering it and no evidence of malignancy, but rather numerous area of small cell infiltration.

Section from edge of carcinoma shows enormous preponderance of fibrous tissue, with much vascularity and but little new epithelial

growth. Here and there are clumps of cancer cells, and a good deal of inflammatory small cell infiltration. This is probably what they call in Vienna in post-mortem reports *Carcinoma ventriculi ad basim ulceris rotundi*. Some reasons for pronouncing it a cancer due to chronic gastric ulcer are, first, the great predominance of fibrous tissue, the scarcity of cancer cell elements, the fibrous papilloma, and situation of the new growth where chronic gastric ulcer is usually seen.

Ewald says: "Chronic gastric ulcers may be classed among the predisposing factors," and proceeds to detail cases of direct transformation of ulcer into cancer seen by Lebert Dittrich and others, and quotes Brinton for cases "in which lesion, macroscopically an ulcer with thickened edges, was accompanied by unquestionable metastases in liver and lungs." In discussing such a case, only 26 years old, Flatow, of Munich, says "there was evidently at first a cicatricial mass, and this facilitated an atypical proliferation of epithelium. In about half the cases the pylorus is involved. In about 10 or 11 per cent. the cardia or lesser curvature, fundus least frequently, orifices favorite site, 70 to 75 per cent.

Dr. Peters reported a case of

INVAGINATED MECKEL'S DIVERTICULUM.

Baby U., age 6 weeks, under the care of Dr. A. R. Gordon.

At the time of birth Dr. Gordon noticed a pinkish protruberance at the umbilical opening. He tied the cord above this, but noticed that there was some escape of gas at the time. The cord separated normally, but gas and fluid fæces continued to escape in small quantities from the opening. It was observed that the escaping fæcal matter had the same character as the motions.

The protuberance was clearly a pervious Meckel's diverticulum in a state of intussusception. It protruded about an inch and a half, being forced out somewhat during straining or crying, and receding slightly in the intervals. During the six weeks of life, the protrusion had increased considerably in size.

The case was operated upon, and made a good recovery. Meckels' diverticulum is an abnormality due to a failure to close of the proximal portion of the omphalo-mesenteric duct. In the process of development the umbilicus begins to be formed about the third or fourth week of foetal life by a growth of the blastodermic membrane, at first from the anterior and posterior extremities of the body, and a little later from the sides. In the sixth week the duct normally becomes obliterated, the atrophied vesicle remaining out-

side the body, between the chorion and amnion. The vesicle, for a time after the obliteration of the duct, is connected by the resulting cord with a coil of intestine, which, together with the cæcum and part of the ascending colon, actually protrudes from the abdominal cavity and occupies the proximal portion of the umbilical cord. These coils are drawn within the umbilicus about the end of the sixth week of foetal life, and the omphalo-mesenteric duct normally becomes obliterated as far as its connection with the intestinal wall, and soon disappears altogether. When that portion next the intestine persists, however, it is called Meckel's diverticulum. According to M. H. Richardson, this abnormality is found in two per cent. of subjects. It is usually situated within three feet of the ileo-cæcal valve, and has the same structure as the small intestine. It varies considerably in size and length, being very frequently of about the same diameter as the adjacent intestine, and usually not more than three or four inches in length.

Sometimes its end is connected by a fibrous cord with the umbilicus, and in such cases it may give rise to obstruction by entangling adjacent coils of intestine. In other cases the end of the obliterated cord is free, and frequently bulbous, and may also cause obstruction by ensnaring adjacent coils of intestine. According to Ziegler, the intestinal extremity sometimes closes, and the remaining portion develops into a cyst. Occasionally it remains patent between the intestine and umbilicus, as in the case reported above. In these cases, prolapse, similar to prolapse of the rectum, is liable to occur, as illustrated by this case. Mansel Moullin relates a case in which this prolapse was followed by a hernia of several loops of intestine, necessitating a free incision in the abdominal wall before reduction could be effected.

Dr. Pepler asked if there was any connection between this condition and hæmorrhage from the umbilicus.

Dr. Primrose said in his experience the diverticulum is usually of the same diameter as the intestine from which it arises. Sometimes within it small tumor masses are found, being fibrous in structure with a mucous covering.

Mr. Cameron thought it was possibly a failure to retract rather than an intussusception in Dr. Peters' case.

Dr. Peters said there was probably no connection between hæmorrhage and this condition. He further explained that it was a true intussusception.

The meeting then adjourned.

H. C. PARSONS, Recording Secretary.

Medical Items.

DOCTORS AND THE TEMPERANCE MOVEMENT.—Medical men, as a rule, are less liable to fanaticism than other people; hence it is not to be expected that total abstinence, which is just as much a craze as vegetarianism, should find many adherents in the ranks of the profession. They condemn the abuse of alcohol just as they condemn the abuse of tea or coffee, but they recognize that used in the right way, and in strictly regulated amount, it is harmless, and to some people helpful in health, and often invaluable in disease. There is no real inconsistency in a doctor preaching abstinence and himself taking such an amount of stimulant as he finds needful to enable him to do his work. The difference between precept and practice may, however, sometimes be illustrated in an amusing manner. Thus it is related of a late physician of the highest eminence, who was known to the public as an apostle of temperance, that a country doctor on one occasion brought him a leash of patients for consultation. The great man asked him to dinner, but first carried him off to a temperance meeting at which he was to preside. The country doctor heard Sir Anthony (this was not the physician's name, but 'twill serve) deliver an eloquent harangue in which the evils of alcohol in any form were depicted in the blackest colors. At dinner afterwards, the country practitioner was astonished and a little scandalized to see the orator, whose eloquent denunciation of alcohol had edified him a few hours before, drink freely of wine. When they had poured a few libations together the country doctor ventured to hint at the apparent discrepancy between his host's views on the alcohol question as expressed on the platform and as illustrated at the table. Sir Anthony shrugged his shoulders and delivered himself as follows: "My dear fellow, I have a very large correspondence, and the only time I can find to do it in is after dinner. I cannot do it at all unless I take some champagne; and when I have had champagne I don't care whether I do it or not!" This is the philosophy of the use of alcohol in a nutshell.—*The Practitioner*.

MR. CLEMENS' HABITS.—I can quit any of my nineteen injurious habits at any time, and without discomfort or inconvenience. I think that the Dr. Tanners and those others, who go forty days without eating,

do it by resolutely keeping out the desire to eat, in the beginning ; and that after a few hours the desire is discouraged and comes no more.

Once I tried my scheme in a large medical way. I had been confined to my bed several days with lumbago. My case persistently refused to improve. Finally the doctor said to me : " My remedies have no fair chance. Consider what they have to fight besides the lumbago. You smoke extravagantly, don't you ? "

" Yes."

" You take coffee immoderately ? "

" Yes."

" And some tea ? "

" Yes."

" You eat all kinds of things that are dissatisfied with each other's company ? "

" Yes."

" You drink two hot Scotches regularly every night, I suppose ? "

" Yes."

" Very well, there you see what I have to contend against. We can't make progress the way the matter stands. You must make a reduction in these things ; you must cut down your consumption of them considerably for some days."

" I can't, doctor."

" Why can't you ? "

" I lack the will-power. I can cut them off entirely, but I can't merely moderate them."

He said that that would answer, and said he would come around in twenty-four hours and begin work again. He was taken ill himself, and could not come ; but I did not need him. I cut off all those things for two days and nights ; in fact, I cut off all kinds of food, too, and all drinks except water, and at the end of the forty-eight hours the lumbago was discouraged and left me. I was a well man ; so I gave fervent thanks, and immediately took to those delicacies again.

It seemed a valuable medical course, and I recommended it to a lady. She had run down and down and down, and had at last reached a point where medicines no longer had any helpful effect upon her. I said I knew I could put her upon her feet in a week. It brightened her up ; it filled her with hope, and she said she would do everything I told her to do. So I said she must stop swearing and drinking, and smoking and eating for four days, and then she would be all right again. And it would have happened just so, I know it ; but she said she could not stop swearing and smoking and drinking, because she had never done those things. So there it was. She had neglected her habits, and hadn't any. Now that they would have come good, there were none in stock. She had nothing to fall back on. She was a sinking vessel, with no freight in her to throw overboard and lighten the ship withal. Why, even one or two little bad habits could have saved her, but she was just a moral pauper. When she could have acquired them she was dis-

sueded by her parents, who were ignorant people, though reared in the best society, and it was too late to begin now. It seemed such a pity; but there was no help for it. These things ought to be attended to while a person is young, otherwise, when age and disease come, there is nothing effectual to fight them with.—*Toronto Mail and Empire*.

OBITUARY.

JOHN H. GARDINER, M.B.—In our last issue there appeared an obituary notice concerning Dr. Gardiner, of London, Ontario, in which it was stated that death was caused by septicæmia. We have since that time received further particulars as follows: On Friday he got a splinter into the knuckle of the right hand, but so small that it was not noticed or removed until some days after he had taken ill. The following Monday he was taken with a severe chill. Tuesday he went out but was compelled to return to bed from which he never rose. Thursday Dr. MacArthur, who saw him, found the right shoulder and up the neck much swollen and the pulse and temperature increased. It was believed to be rheumatism. Saturday the right shoulder and arm were somewhat easier but the left elbow had become involved. Sunday the right foot and leg were much swollen and inflamed. Monday the right foot and leg were black and blistered, and that afternoon he died. Pulse, during most of the time he was seen, ranged from 110 to 120; temperature never found higher than 103°. No other source of infection than this slight wound in the knuckle could be found, and at no time did it take on any particular inflammatory action.

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